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THE TENEMENTS AND TUBERCULOSIS.

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NEW YORK CITY.

If I should be asked what conditions are most conducive to the propagation of tuberculosis, and especially pulmonary consumption, I would have to reply: the conditions that prevail in the old-fashioned tenement houses as they still exist by the thousand in this and other large cities. In these tenements there are not only a far greater number of consumptives than in the same area elsewhere, but the proportion is actually greater per number of inhabitants. Thus they not only contain countless centers of infection for old and young, and multiple foci of reinfection for those already afflicted, but these dwellings, with their bad air, darkness and filth, make a cure of the disease impossible, and a lingering death for all those infected by the germ of tuberculosis a certainty. If any one thinks me an alarmist, let him glance at the charts exhibited in this building. There he will see that there are houses in which can be counted as many as twenty consecutive cases of tuberculosis during the last four years. This number represents, however, only the cases reported to the Board of Health. Now, you must not think for a moment that these represent the actual number of cases of tuberculosis existing in that particular tenement. They are only the ones where the disease had so far advanced that medical aid became imperative, a physician had to be called in, and the case was reported. But how many of the moderately advanced cases are made known to either physician or board of health? I venture to say those not reported are more numerous than the reported ones. They constitute that class of pulmonary invalids who are still able to work, and who imagine themselves to be suffering only from chronic bronchitis, and the equally large number of children suffering from tuberculous manifestations other than pulmonary. To the uninitiated it may sound like a paradox when I say that the tuberculous invalid who is still up and about, perhaps supporting his family, is often the greatest danger to the community, to his friends, his neighbors, and to those who may succeed him in the tenement in which he lives. It is this class of consumptives who, either from ignorance or carelessness, spread their disease broadcast by depositing their infectious sputum everywhere without any regard to the danger.

In the many discussions which were raised during the past few months previous to the framing of the bill to establish a state sanatorium for the treatment of incipient cases of pulmonary tuberculosis, it was repeatedly argued that we should rather isolate first the advanced and hopeless cases. I appreciate the necessity of public care for this class of patients very much indeed, but the advanced and hopeless poor consumptive is usually confined to one or two rooms, and while ten to one he will infect these thoroughly, he can not do as much harm as he used to when he was still up and about and could spit in dark hall-ways of the tenement, on the floor of his workshop, in the street-car, or wherever his calling may have led him. Thus the advantage of curing an incipient case of plumonary tuberculosis is inestimable. Leaving aside the direct benefit to the commonwealth by making a breadwinner and useful citizen of this pulmonary invalid, who himself and also perhaps those depending on him, might have become otherwise a burden to the community, it is beyond calculation to say how many lives may have been saved by curing that one man before he had a chance to disseminate his disease among his fellowmen in the manner described. To what extent he may do this you can perhaps perceive if I recall to you the fact that the average number of bacilli which the up-and-about consumptive expectorates daily is estimated to be seven billions.

But let us return to our main subject and try to find some explanation for the fearful condition which makes pulmonary tuberculosis an endemic disease of the tenement house. I pointed out to you that there were houses where an unusual number of consumptives have lived and died during the past few years. Now, let us pay a visit to one of them. We pass the throng in the narrow street, make our way through the crowds of children playing on the sidewalk, and enter the dark hallway. The first thing that greets us is the odor peculiar to badly housed humanity. You can not define it, but I know many of you who labor among poor know it only too well. Have you ever thought what this odor really means? It represents the exhalation of a multitude of people, the toxic products expelled during the process of expiration, which settle on the walls, ceiling, and stairs of these hallways. Chemistry has not yet been able to fix its composition; we know it exists and we know its deleterious influence on the individual who is obliged to live constantly in such a house. Some very prosaic people call this smell the smell of humanity, or the smell of poverty. I do not quite like these names for I do not think them either appropriate or just. There can be humanity without smell, and amidst poverty there can be the sweet atmosphere of cleanliness and purity. If the bad odor we perceive in our wanderings through those dark halls must have a name, let us call it the smell of ignorance and greed. It is the result of ignorance on the part of the poor housed there, who do not know the value of fresh air, sunlight, and the cleansing property of water—the trinity which is the best antitoxin against those poisonous products. It is the result of greed on the part of the owner, for only a heartless man could tolerate such a condition of filth, foul air, and darkness as is characteristic of these tenement halls.

*Delivered before a conference held under the auspices of the Tenement House Committee, of the Charity Organization Society, New York City, Feb. 20, 1900.

We ascend one more flight of stairs, in the rear or front, it makes little difference, since there is probably a consumptive on each floor. Owing to the expense of artificial lighting the halls are very dim, and though we can not see the dirt on the balustrades we feel that it is there and only reluctantly take hold of them in order not to fall. We arrive at the rooms we are seeking. A knock at the door, a feeble invitation to come in, and we are in the midst of tuberculosis. There are two or three small rooms, but only one receives direct air and light. In a small, dark bedroom lies the patient; there is a different odor in this room, a distinct smell of disease mingled with the odor of cooking. We ask to have the window open, but the patient fears the draft. He is a husband and the father of six children of whom two have died within the last year. The youngest of the remaining children is a few months old; the eldest, a girl of 10, attends to the household duties while the mother goes out to work. We greet our consumptive friend lying there, bid him cheer, and tell him we came to investigate his case. He faintly smiles, and we ask him to tell his story. In a feeble voice, interrupted by fits of coughing, he tells us that up to two years ago he was a strong and vigorous man, he had a good position as a mechanic, lived in a better tenement than now, and drank only occasionally, when life at home became too dull. Once he caught a severe cold. He went to a doctor. A few weeks of rest followed, some medicine, and he got well. After some months he had another cold, the same treatment, the same result. And then again a cold, and so on, until the periods between the times when he could labor and earn became longer and longer. The savings from better times gradually disappeared; a cheaper tenement was sought; the visits to the doctor were given up, and the patient finally ceased to work. To go to the dispensary was too much of an exertion. The faithful wife nursed him tenderly, but soon all the savings were gone. The burial of the two little ones—one having died of bowel complaint and the other of brain trouble—had cost so much that the mother decided to go out to work in order to support the family. While listening to the pitiful story we look around the scantily furnished rooms. The babies are playing on the dirty floor, touching everything with their little hands, putting their fingers in their mouths, and inhaling the dust laden with disease germs. When we consider that this case has only been reported a few weeks ago, and that until then the patient had hardly taken any care with his expectorations, can we wonder that two of the children died within a few months, one from bowel-complaint—which probably was nothing else than intestinal tuberculosis—and the other from brain trouble, which is only another name for tuberculous meningitis. The remaining little ones look pale and underfed. The little mother preparing the evening meal has seemingly a better appearance. She has to do much running out in the street to buy the provisions for the family that she gets more air, and if the father does not feel too badly she wheels out the baby sometimes. Yet to the experienced eye there are already traces of overwork in this delicate child organism. The precautions the patient takes now with his expectoration consist in having placed before him on the floor a cuspidor partially filled with some antiseptic fluid. Owing to his weakness he does not always succeed in depositing his sputum exactly in the center, and sometimes he even fails to hit the vessel at all. We call his attention to this lack of precaution and advise him to use a light mug which he can bring near to him, or moist rags which he should have burned in the evening on his wife's return.

We bid adieu to this interesting family to visit another case which had been reported two flights higher up. But on the next floor we pass a door wide open and hear the rattling of sewing machines, suddenly interrupted by a terrible cough. We halt and listen for a moment—another cough of different pitch, coming evidently from another person. We enter—again a different picture. The air is filled with dust and steam, the odor indescribable. The room is filled with people: an elderly man with dark features, a velvet cap on his head, a wife, a son, a daughter-in-law, two young girls and a number of children, all in one room, the growing persons working over their machines or pressing garments with heavy flat-irons, the little ones playing on piles of cloth or unfinished clothing. These latter with the children playing about them are the mysterious agents which, as newly-made garments, are not only capable of spreading tuberculosis, but are frequently the very medium whereby acutely contagious diseases, such as smallpox, diphtheria, scarlatina, and measles, are carried into the homes of the well-to-do. The description of the home we are visiting has already told you that we have before us a small sweat-shop. Without questioning we recognize in the young mother and in her unmarried sister the two coughers. We venture to ask them as to their condition, but they tell us that they are well. One says she coughs only because she is going to become a mother again; the other assures us she coughs only when she bends too intently over the machine or when the little ones raise too much dust. Both women are plainly in a state of evolution of pulmonary tuberculosis. Both expectorate freely and, alas, indiscriminately, spreading their disease among their own kin and others. They have not yet consulted a physician; they did not feel the need of one, and besides this, it takes time and money. They occasionally get some patent cough-mixture in the nearby drug store. As a matter of course, these cases belong to the class of unreported ones. Should these people ever move before their cases become known to the Board of Health they would leave the germs of tuberculosis in every portion of the rooms, and the new occupants would have all possible chances to contract the disease, for you must know that tuberculosis sputum often retains its virulence in the dried state for a long period of time, but especially so in places where fresh air and sunlight have little access.

Ducor, quoted by Dr. Park of the New York Health Department, in his recent book,[1] relates an instance of a healthy family having been infected with tuberculosis from living in a room which had been occupied by a consumptive two years before, and on examining the sputum-stained wall-paper not only were tubercle bacilli found in it, but on guinea-pigs being inoculated with scrapings from the walls they died of tuberculosis.

We advise the two young women to call in a physician or to go to a dispensary, and urge them not to expectorate except into a vessel partially filled with water, and if this is impossible, owing to the crowded condition of their workshop, to use a small pocket flask for that purpose.

We have one more family on our list, which we desire to visit. Again a cough re-echoing in the hallway would guide us even did we not know where to go. This cough, which is heard on nearly every floor, recalls to one's mind a hospital ward of consumptives. Our third visit leaves a less painful impression, for the rooms we enter are clean. The sufferer is a widowed mother. Thanks to

[1] Wm. H. Park: Bacteriology in Medicine and Surgery. Philadelphia: Lea Bros. & Co.

the conscientious advice of the physician the disease seems here to be under control and confined to one member of the family. There is little hope for her recovery, and her total helplessness makes it necessary for her only maiden daughter, otherwise a regular breadwinner, to remain at home and consecrate her entire time to the nursing of her mother. In the home and the faces of both of these women one can still see the traces of refinement and culture. What calamity has brought them into these surroundings must remain their secret, but we know that only with reluctance do they accept the much needed help which comes to them regularly through the medium of the charity organization.

Such and sadder pictures you can see daily in visiting the tenement homes of our city. To many of you the thought may have come: why are these people not in a hospital? I must answer you by saying that there is no room for them.

But what can we do to stop this plague if there is no room for the advanced cases in the hospital and no sanatorium for the care of the incipient cases? I believe I may modestly claim that I am an ardent advocate of the establishment of sanatoria and special hospitals maintained by the authorities and private philanthropy, and other public measures to stop the spread of tuberculosis, such as better sanitary laws, more public baths, parks, and playgrounds, especially in the crowded tenement districts, proper physical and hygienic education in our schools, etc.

While the realization of these institutions and proposed improvements will do a great deal toward the decrease of tuberculosis, the greatest factor in solving the tuberculosis problem will, however, be the proper housing of the poor. As long as the law will permit tenements to exist, or to be constructed anew, which, owing to the lack of air and light and want of cleanliness constitute veritable hot-beds of tuberculosis, so long will sanatoria and special hospitals serve only as recipients of the supply of tuberculous patients daily created anew.

Tuberculosis is a preventable and curable disease. Let us emphasize these important points in our crusade against it. In spite of all the opposition which we have encountered I do not fear but that ere long we will have a state sanatorium for the treatment of incipient cases and a special hospital in the vicinity of the city, which will be followed by the establishment of numerous institutions by private philanthropy. My faith in the wisdom of our statesmen and city fathers, and in the generous hearts of the American philanthropists, is too great for me to falter in my hopes. Such institutions—sanatoria and special hospitals—will serve to cure those already afflicted with the disease; but the model tenement house and the model tenement house management will be the greatest factors in preventing the development of the disease. Though, when we consider that we have in this city alone more than ten thousand poor consumptives, those new and model tenements will probably have to at times harbor a few tuberculosis patients; but how much brighter prospect they have of being cured in these new houses with plenty of light and air, perfect ventilation in all rooms, complete sanitary arrangements, and the absence of filth, dirt, and sickening odors.

Since consumption can be successfully treated in near- all climes, and the essentials of the modern treatment f tuberculosis are plenty of fresh air and light, good ood, and judicious medical supervision, the probability f treating an intelligent consumptive patient successlly, even at his home, must certainly be an assurance o us all, since we know that there will not be room enough for all these patients in the institutions. The danger of infection from such a patient in a model tenement house can be reduced to a minimum, and the same might be said in regard to other contagious diseases.

In Germany it has been proposed that in order to control and combat tuberculosis successfully, every person should submit himself to a periodical examination for the possibility of a tuberculous disease, and that this examination should be compulsory, like vaccination.

As to the advisability of inaugurating such a movement in our own country I prefer to suspend judgment; but if I should be the fortunate owner of a model tenement house, I certainly would make the medical examination obligatory for all those who desired to become my tenants. Should there be one, two, or even more among them, with incipient tuberculosis, I would not refuse to these the blessings of a sanitary home, which, as long as we have so few special institutions, will certainly be an addition to their chances of getting cured. But I would have every one of these prospective pulmonary invalids instructed individually as to the precaution he has to take concerning his infectious sputum, and urge him to place himself under medical treatment. I would warn him that though the hospitality of this model tenement house had been extended to him, if he ever wilfully violated the given instructions and regulations concerning the disposal of his expectorations he could no longer remain in the house. Let me remark here, incidentally, that the application of this injunction constitutes the essential part of the discipline in sanatoria and special hospitals in our own country and abroad. Any wilful violation means immediate dismissal. It is this precaution whereby the healthy individual is more protected from contracting the disease in these very homes for consumptives, than probably anywhere else outside of them. I could verify this statement by statistics which I have published before[2] in connection with this subject, but I will refer here only to one of our home institutions, the Adirondack Cottage Sanatorium, under the direction of my esteemed friend, Dr. E. L. Trudeau. During the fifteen years of its existence not one of the medical attendants and nurses, who have lived and labored there in close contact with hundreds of consumptive patients, has ever contracted pulmonary tuberculosis. Thus, I believe, the model tenement house could also be made a place safer from the danger of contracting pulmonary tuberculosis than any other. But I would go even a little further in my precautions to avoid a repetition of such sights as we observed in our wanderings through the tenements of the city. I would see to it that all the tenants should get a sufficient knowledge of what to do in case there is a patient suffering from a communicable or contagious disease in their midst. Leaflets such as the Pennsylvania Society for the Prevention of Tuberculosis issues for distribution should be placed at regular intervals in the hands of the tenants. The titles of some of these leaflets are as follows: "How to Avoid Contracting Tuberculosis." "How Persons Suffering from Tuberculosis Can Avoid Giving the Disease to Others." "Predisposing Causes of Tuberculosis and How to Avoid and Overcome Them." In short, I would found a local society for the prevention of tuberculosis, composed of my tenants and those of other model tenement houses. I would institute reunions and invite physicians and sanitarians to address them, not only on the prevention of tuberculosis, but also on the prevention of other diseases. If I could besides this succeed in procuring one of those

[2] S. A. Knopf: Prophylaxis and Treatment of Pulmonary Tuberculosis P. Blakiston's Son & Co., Philadelphia.

noble women who could teach to the women tenants the art of good and economical cooking and careful housekeeping, and procure for all men, women, and children alike, such educational and social features as would make their home life happier and brighter, I would think that the ideal of housing the poor was attained.

After the description of all that you have heard and seen since this splendid exhibition has been opened, there is no need for me to tell you of the urgent necessity of better laws concerning the building of tenement houses, and you will realize that it becomes our duty as men and citizens to no longer tolerate existing conditions. But in the meantime we should combine our individual efforts to further all such enterprises as, independent of legislative help, will attain the same end. Though we may not reap what we sow, as our worthy chairman, Mr. Frederick W. Holls, at the opening of this exhibition so beautifully suggested, let us sow our grains nevertheless, and let us sow them well and diligently. In the proper housing of the laboring classes lies the welfare of the community and the sanitary, social and intellectual prosperity of every citizen.

Think of the difference between the old tenement, which we desire to abolish, and the new one we desire to erect, and you will need no further incentive. The one is a beehive of humanity living in filth and dirt, well-nigh without light and air, but with a multitude of sickening odors; with no attractions to foster home life, virtue and temperance; disease breeding in every room; a hot-bed of tuberculosis and other contagious diseases from which are spread the foci of infection throughout the city among old and young, poor and rich alike. The other is a well-regulated city within a city, its citizens living in airy, sunny rooms, in modest but attractive homes, which make the longing for the rum shop less, and create a love for temperance and purity; a home where infectious diseases can be controlled and from which the most bitter foe of mankind, "the great white plague"—consumption—can be ultimately and lastingly banished.

16 West Ninety-fifth Street.

NOTIFICATION AND STATE SUPERVISION OF THE TUBERCULOUS.*

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The general acceptance of the bacillus discovered by Koch as the exciting cause of tuberculosis in man and the food animals is based on the most careful experimental observations. Without the bacillus there can be no tuberculosis. Therefore, if we should destroy all these bacilli there would be an end to tuberculosis. This appears to some logical, simple and, to a degree, possible of attainment. It is a sequence of cause, effect and prevention which has produced a revolution in medical thought and action.

Whereas formerly an occasional instance of apparent communication of the disease from one individual to another excited some speculation as to its possible contagiousness, or was explained by heredity or coincidence, now all is changed—infection or communication from another is almost universally recognized as the essential factor.

Tuberculosis then being an infectious disease affecting a larger number of individuals than any other, it naturally falls into the jurisdiction of state medicine.

Since 1882 there has been an increasing and extending agitation for the suppression of tuberculosis by special state supervision and control of the tuberculous.

We encounter here enthusiasts and extremists on the one hand and doubters on the other, just as in any other imperfectly understood problem in social economics. To quote one of the former, here is a widely circulated statement by Dr. Biggs, of the New York City Board of Health, whose earnest work for the suppression of tuberculosis in that city has commanded general approval. He says (*Forum*): "With our present knowledge we have it in our power to completely wipe out pulmonary consumption in a single generation." Again, Dr. Geo. M. Gould, says: "Phthisis, the most fatal of diseases, causing one death in eight, is now proved to be contagious. Its inception depends upon the passage of the living bacilli from one organism to another. When this is prevented the dread affection will no longer mow down its victims. Its prevention seems easy and by two feasible, simple means—the devitalization of the sputum of consumptives, the inspection of dairies and the slaughtering of animals." Dr. Schonock asserts that "Tuberculosis is a preventable disease and one of the unnecessary afflictions of humanity."

Admitting fully that the essential factor in the spread of tuberculosis is the bacillus, that its definite life history, its food, growth, and decay and manner of transmission have become known, let us consider whether the extermination of phthisis is in sight: whether it has become a simple problem—a bacillary premise and a legislative conclusion—the observation and experience of years as to the numerous contributing factors in the production of tuberculosis nullified, or only temporarily lost to sight.

While the dried sputum of consumptives and the milk of tuberculous cows are known to be the common distributors of infection there are other minor ones which may be noted. Spano demonstrated that seminal fluid may infect even when the genital tract is not involved in the disease. Of eight cases he demonstrated the presence of tubercle bacilli in the seminal fluid of three.

They have been found unharmed in the interior of large underdone joints exposed to the ordinary roasting point. Schugard demonstrated their presence in chancres and soft sores and gonorrheal pus. Successful inoculations are reported with the tissues of tuberculous infants, and the amniotic fluid of a tuberculous woman. Hirschfeld recently found the bacilli in the placenta and in the capillary vessels of the fetal liver. It is estimated that from 6 to 20 per cent. of cattle and 5 per cent. of milch cows are infected, and the bacilli may rest in the discharge from the mouth, nose and bowels, drying upon hay and grass. Hogs and domestic pets are not infrequently infected. Jensen reported 44 cases in dogs and 33 in cats. In Berlin an examination of a large number of parrots showed that 25 per cent. were tuberculous. Lortet demonstrated that earthworms are capable of ingesting and ejecting tubercle bacilli without the microorganisms losing their virulence, and that the bacillus has retained its virulence after being buried for one year. Experiments in the laboratory of Professor Flügg proved that it is possible to carry particles of infected sputum in the act of speaking, to a distance of four feet.

Besides the direct inhalation of bacilli from desiccated sputum we must note their deposit on bakers' goods and all articles of food consumed in the raw state. Schnirer rinsed the dust from grapes bought at a street stand and developed tuberculosis in two guinea-pigs out of three. Hoffman found that flies may carry the germs in their intestines and deposit them in their droppings.

*Read before the Chicago Medico-Legal Society, Dec. 2, 1899.

It has been estimated that a consumptive may expectorate several billion tubercle bacilli in twenty-four hours, and that there are at least 500,000 living individuals in this country with pulmonary tuberculosis.

What innumerable foci for the spread of the disease are thus provided in houses, railroad cars and public halls. We should expect an epidemic of a clearly communicable disease under such opportunities. At least tuberculosis should be increasing in frequency, but the opposite seems to be true: it has been decreasing for many years.

Heretofore no measures to isolate or disinfect consumptives have been in force, yet the disease is less prevalent than formerly.

The death-rate from consumption in England, from 1838 to 1852, decreased 26 per cent.; from 1852 to 1892, 50 per cent., all ascribable to general sanitary improvements, such as the extension of main sewers and house drainage. Sandberg made a critical inspection of vital statistics in England from 1850 to 1886, and proved that phthisis has steadily decreased in the agricultural districts; the decrease was 50 per cent. in females. Billings shows a decrease of 10 per cent. in the phthisis mortality of the United States between 1880 and 1890. Dr. E. F. Wells, of this city, has personally collected the death returns of the seventeen principal cities of the United States for such periods as they were matter of record, showing a marked decrease of the phthisis mortality in nearly every instance. And yet the centers of infection, though decreasing in numbers, must have been increasing in volume of expired bacilli if it be true, as Theodore Williams, supported by Pollock, claims, that the average duration of phthisis is now four times as long as in the time of Laennec and Louis.

In the extension of tuberculosis we should expect physicians and nurses who are in most frequent and close contact with consumptives and inferentially their bacilli to be unusually liable to infection. Making all due allowance for the errors, inconsistencies, and contradictions assignable to such collections we have considerable evidence on the negative side.

Haupt investigated the history of 275 female nurses who had been in habitual attendance on consumptives: only two became tuberculous. The collective investigation committee of the British Medical Association, in 1883 instituted an inquiry into the communicability of phthisis. Out of 1078 who returned answers less than one-quarter had seen cases which they believed had originated by communication from one person to another.

Da Costa says that in the Vienna General Hospital—before disinfectants were used—there were in three years nearly 3000 deaths from phthisis and not one medical officer or nurse became affected. In the Pennsylvania Hospital there never had been a time when there were not many consumptives in the medical wards. Of 147 resident physicians whose history he had followed but one died of tuberculosis. Of 93 male and female nurses employed in the last twenty-five years, only one showed signs of tuberculous disease.

Williams and Humphrey state that at the Brompton Hospital, during thirty-six years, not one clearly authenticated case of pulmonary consumption originated among all its staff and employees.

The statistics of Friedrichshain Hospital in Berlin, as given by Fürbinger, show that during sixteen years, out of 887 physicians and nurses there were only 9 who became consumptive and 3 of these were tuberculous before entering. Out of 108 Victoria nurses in the hospital 2 to 5½ years each, only 1 become tuberculous. It will not do to attempt to attribute this immunity to disinfection of sputum, as much of the period covered was before the recognition of this source of danger.

There should be plenty of evidence also of the frequent communication of tuberculosis by married persons to their partners in the closest association of life. Dr. Cooper reported, on the other hand, that he had personally known and followed the history of 55 cases of phthisis in married persons; 40 of them had died of it, the surviving partners all living and free from the disease after six to thirty years. Flint, in 670 cases of death from tuberculosis of married persons, found but five cases in which the partners became similarly diseased. Dr. Schnyder observed 844 cases in married people. In only 32 were both husband and wife affected, or one in thirty.

Longstaff has made the calculation from averages that for every 148,000 men who die during the age of married life there would be 4358 of their wives who would have consumption without reference to contagion from their husbands, that is, 1 in about 33.

There is also experimental evidence on the negative side of easy infection from supposedly infected places. Praussnitz unsuccessfully tried to inoculate animals with dust from the floors of railway compartments carrying consumptives for many hours. Kusterman also failed to develop tuberculosis from the dust from the walls and floors of the Munich prison. Herne and Chaplin report, in the London *Lancet*, that they made inoculations of 100 guinea-pigs with dust from various, probably infected, parts of the City of London Hospital—and note that there must have been dry tuberculous sputum in the pathologic workroom. They met with evidence of tuberculosis in only two of the guinea-pigs.

Gardiner has recently inoculated with dust obtained from different rooms in the largest hotel in Colorado Springs, Colo., occupied by consumptives, with negative results in eight cases.

It is frequently asserted, in an offhand way, that certain resorts have become dangerously infected by the concourse of consumptives. Among others, Mentone is cited as a place where tuberculosis has become common among the resident population. But when we read the report of Dr. Bennett, the resident physician, which appears to be the foundation for this opinion, we find that what he actually notes is an increase among the women of the town who formerly worked in the fields with their male relatives, but who subsequent to the incursion of numerous consumptives became laundresses and domestic servants, and he asks if the increase of consumption which he notes only among these workers be not due to change from outdoor life to work in damp, close and ill-ventilated rooms.

Recent statistics of Falkenstein show that the village mortality from phthisis has been reduced 40 per cent. since the establishment there of the sanatorium for consumptives—an odd revelation of the death table, however, is the fact that the mortality from phthisis has increased from 5 per cent. to 15 per cent. in 1892-94, under the antiseptic régime, though still remaining lower than before the establishment of the sanatorium. So also at Göerbersdorf, the site of the largest sanatorium of the kind in the world, many thousand consumptives have deposited their expectoration in the streets of the village, so that the inhabitants continuously respired air potentially more or less laden with tubercle bacilli, with the result that the absolute number of deaths among them from phthisis is about half as many as before the estab-

lishment of the sanatorium, and the population has doubled.

It is rumored that Colorado resorts have become infected by the numerous consumptives who have sought the benefit of its climate, that there has been a great increase in the cases of tuberculosis originating there, and that the State Board of Health had under consideration the advisability of quarantine against more consumptives. Dr. S. G. Bonney, of Denver, has made a careful investigation and proves these statements to be untrue. The death-rate from indigenous cases was less in 1896 than in 1895—one-third of the patients were under 15 years of age—some the children of tubercular parents. Dr. Solly, of Colorado Springs, says that living for sixteen years among a people of whom many came to the country with tuberculosis, and not a few of whom live in crowded lodgings where free expectoration is commonly practiced, he knows of only four cases which could fairly be assumed to have originated in Colorado.

Dr. Gardiner reports that as a result of a circular letter of inquiry to many physicians of Colorado he could learn from them of only ten cases in fifteen years.

It certainly is a fairly reasonable conclusion from these facts that the spread of tuberculosis is not in accord with the degree of exposure to the bacillus.

The wide diffusion of the bacillus tuberculosis makes inevitable contact with it on the part of every individual in thickly-settled communities—the marvel then is not that one-sixth become fatally infected, but that more than half entirely escape. The evidence presented as to the escape of those in contact with the tuberculous is not offered in abatement of the claim of the bacillus as the essential factor. It is evidence, however, of the fact that one in fair health, living a regular and hygienic life, has little to fear from contact with the bacillus. We must assume, moreover, for those who do become infected, a weakness of resistance to the lodgment and multiplication of the bacilli, inherited or acquired. Hereditary predisposition, however explained, remains practically a factor to be dealt with in the genesis of tuberculosis. There is no time to even suggest all those circumstances of external environment, bodily formation, habits and degenerations which favor acquired predisposition.

A quotation from Jaccoud, recently cited and endorsed by one of our oldest and most eminent teachers, summarizes the interdependence of the bacillus and the predisposition most aptly in these words: "With this class of organisms pathogenesis by changes in the organism is the rule, and its traditional etiology based on heredity, congeniality, predisposition, temperament, somatic or cosmic influences retains all its force." That the natural history of infection, depicted as an active bacillus on the one hand and a comparatively passive resistance of the organism on the other, has been overdrawn, is confirmed also by recent bacteriologic development. H. P. Loomis made inoculations with the bronchial glands of persons dead from accident or acute disease apparently free from tuberculosis. One-fourth of the rabbits developed tuberculosis. Pizzini made observations on the lymph glands of thirty individuals who had died without any clinical evidence of tuberculosis—in twelve instances he developed tuberculosis by inoculation of guinea-pigs.

The recent bacteriologic work of Dr. Adami[1] of Montreal, so graphically presented to our local medical society recently has added new and convincing evidence of the not occasional, but constant, presence of noxious bacteria in the organism, and the equally constant bactericidal activity of the leucocytes and the disintegration and elimination of the bacilli in the glands, the liver and kidneys. His observations point also to the etiology of cirrhosis of the liver by overwhelming invasion of the bacillus coli through coincident breach of the natural line of defense produced by catarrhal disease of the intestinal tract. These additions to our knowledge emphasize the belief that we are to rely for immunity from infection, not solely on an artificial absence of bacteria, but at least in equal degree on the maintainance of the inherent germicidal activity and vigor of the organism.

Until recently public preventive measures against tuberculosis have been directed only to the abatement of the predisposing conditions. The reduction in phthisis mortality as a result of these sanitary measures has been general and in many cases remarkable.

Acquainted now with the exciting as well as the predisposing cause of tuberculosis we are no longer restricted to defensive measures of increased vital resistance, but may undertake offensive action to destroy or limit the bacillus. The ubiquity of the bacillus suggests the magnitude of the task and assigns its accomplishment to that happy period when all men are honest, all women virtuous and the poor no longer with us.

We have it in our power, however, to greatly lessen the dissemination of the bacilli by practicable methods and thus decrease the chances of new infection. While there are many who do not share in optimistic enthusiasm as to the results to be anticipated, few will question the desirability of the attempt by unobjectionable methods.

The measures to be taken for the prevention of tuberculosis naturally divide into those directed against its dissemination by infected food animals on the one hand and those directed against infected man on the other. In regard to the former it may be briefly said that the conditions of success are comparatively simple. Rigid inspection of herds and dairies and the destruction of the infected animal solve the problem, requiring only the necessary law and its efficient execution.

Knopf, in 1897, reported that twenty-three states of the Union provided for official distribution of circulars of instruction as to the dangers of communication of human tuberculosis and the precautions to be observed as safeguards against infection. In Michigan and Pennsylvania resolutions had been adopted to include consumption in the official list of diseases dangerous to public health. In New York notification of all cases is compulsory. It is evident then that action against human tuberculosis has been confined, with few exceptions, to a commendable effort of education of the people, but that there is a growing tendency to more radical action. The statement was recently made in a medical journal that not long ago, in Detroit, Dr. E. A. Shurly was prosecuted by the local board of health because he refused to report his cases of phthisis; that in the defense Dr. Gibbes took the ground that there was no proof that consumption is contagious. Judgment was rendered against the physician and appeal taken to the supreme court. The report of the Department of Health of New York City, 1897, laments the difficulties of effective preventive measures because of the lack of special sanatoria, that is to say segregation, and incidentally intimates that "the work of restriction of tuberculosis has just begun."

On Sept. 15, 1899, the following preliminary resolution was passed by the State Board of Health of California: "*Resolved*, That the State Board of Health consider the propriety of quarantining against human beings and domestic animals with tuberculosis entering the state."

[1] THE JOURNAL, Dec. 16 and 25, 1899

In its present form the New York City compulsory registry law stands as a compromise measure: the result of attrition between the enthusiastic contagionists of the Department of Health and the opposition of the local practitioners. It may serve as a model of the most advanced action which will at present meet general approval. With the copy of the act requiring registration of all cases public or private coming under the observation of the physician within one week, is mailed a circular of information for physicians, which says that there will be no sanitary inspection or interference by the Health Department in private cases unless requested by the reporting physician, nor in those in lodging-houses or tenements where the reporter specially asks for non-interference. The law further provides for inspection of the premises occupied by the tuberculous, and the instruction of the family in preventive measures, and the disinfection of premises vacated by the affected, which must not be reoccupied until orders of the Health Department are complied with.

Preventive measures against infectious diseases self-limited, of brief duration, meet common approval, and are enforced with little inconvenience or difficulty. Tuberculosis, on the contrary, affects the individual for a number of years. During this period, instead of being confined to bed by the severity of his illness, the consumptive is little incapacitated for movement: he engages in the ordinary occupations and diversions of life, and frequents stores, factories, public halls and conveyances. During all this time he is hypothetically an ambulant source of infection. If these patients be put on the infectious list by compulsory registration, the first step is to instruct them in the danger of infection from their expectoration, and direct the means by which they shall dispose of this source of infection. If there be no further procedure it would seem as if registration were but a means of obtaining statistics as to the location, age and occupation of the tuberculous not worth the consequential interference in private affairs: for it is evident that the carrying out of the preventive measures must be left to the care and conscience of the individual: any practical degree of surveillance of the careless and indifferent while at large, by the authorities, being of course impossible.

To be more than of instructive benefit there must be, for the careless or incapable, penalties, or means of enforcement of the preventive measures. Segregation offers itself as the only reliable protection. The state must then provide places where these people may be separated from the community with favorable conditions for recovery. Needless to say these places do not yet exist.

The next step in preventive measures against tuberculosis easily suggests itself as a sequence to segregation. If it were well to isolate the tuberculous already in the community, it were better still to prohibit the entrance of more from the outside. So we have quarantine as the legitimate outcome of compulsory registration. The California Board of Health, with characteristic western disregard for precedent, jumped the intervening steps and landed at the top.

While I share in the general recognition of the value of instruction of the people in the danger of the dissemination of tuberculosis by the sputum of the consumptive, and in the method of disposal or disinfection by which this danger may be minimized, I believe that in spite of the agitation for state preventive measures there exists in the mass of the medical profession a strong, if quiet, opposition to any radical steps in state interference with the tuberculous, and that it is based on: 1. An underlying belief that there is a variance between the infectiousness of tuberculosis, predicated on scientific experiment and deduction and the actual everyday facts of common observation. 2. On the instinctive recoil of reason and humanity at the difficulties and hardships of the progressive measures which are the logical sequences of the first step. 3. On the evidence we have that tuberculosis in man is to be decreased by increasing vital resistance, discouraging tuberculous marriages, and improving general and individual sanitary environment and living.

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DISCUSSION.

DR. E. FLETCHER INGALS, Chicago—The control of tuberculosis is one of the most important problems that confront the science of medicine at this time, and this very fact has led to a vast amount of visionary talk by some members of the profession, and to some vicious legislation, in an attempt to accomplish something toward the diminution of tuberculosis. This problem, in its effects on the human mind, excites action similar to that called forth by the financial problem, which is always paramount with the majority of mankind.

A considerable percentage of men will at once accept the most visionary schemes if they promise speedy riches, and a much larger percentage will place implicit confidence in other schemes, right in part, but lacking in one or more of the essential elements of success; so some physicians and laymen adopt, with more or less enthusiasm, absurd, or more or less visionary propositions for stamping out tuberculosis, while they ignore some of the essential facts that must be considered if anything of value is to be accomplished.

Pulmonary tuberculosis is in many respects analogous to croupous pneumonia: both are very frequent and both are frightfully fatal; both are recognized as of microbic origin, and consequently both are considered by some to be contagious; however, it is only in very rare instances that we can find any evidence of contagion in pneumonia, and it is in a very small percentage of cases only that we are able to find anything like proof of tuberculosis having been contracted by one person from association with another suffering from the disease. The diplococcus pneumoniæ is thought to be present in all or nearly all cases of croupous pneumonia and the Koch bacillus may be found in practically all cases of pulmonary tuberculosis; but the diplococcus pneumoniæ is also present in the secretions of the mouth in a large percentage of healthy people, and the tubercle bacillus is also present in some of the tissues of the body in a very large percentage of perfectly healthy subjects, facts which prove beyond doubt that there are *other* elements entering into the etiology of these diseases. These two diseases present so many points of similarity that we can no more hope to stamp out one of them than the other. A well-known pathologist said to me recently, that before we were able to stamp out pulmonary tuberculosis the human family would, in the natural course of events, have become immune to the influence of the Koch bacillus.

We must do all in our power to control both of these fatal maladies, but we can not accomplish much by attacking any one of their several etiologic factors. We should work for that which is possible, and not waste our time crying out and striving for what is far beyond our reach. Before making up our minds what should be done toward requiring physicians and friends to report all tuberculous cases to the Board of Health, we should carefully consider some facts that are often ignored.

Although it is recognized that the tubercle of Koch bacillus is the essential cause of tuberculosis, yet no one has thus far been able to determine why certain individuals are attacked by the disease and why others escape. The knowledge that these bacteria cause tuberculosis under certain conditions, has led many to believe that nearly all persons affected by the disease are infected through some other individual. All told, a considerable number of cases have been reported that can be fairly charged to contagion, but as against this there are hundreds of thousands in which there is not the slightest evidence to justi-

fy such a conclusion. Out of about 1600 of my carefully kept records of private patients suffering from pulmonary tuberculosis, I have taken at random 100 records which may be supposed to give a fairly good idea of how the rest would run. Of these 100, only 1 or 2 per cent. show any evidence of contagion. There were just two cases of this sort, in one of which there was no evidence of heredity, but a history of having been associated with a friend who had phthisis. In the other, a widow free from hereditary taint developed tuberculosis 2¼ years after the death of her husband from consumption. These may both have been contagious, but either or both may have resulted from some of the other causes of the disease and the association may have been merely a coincidence. In 27 per cent. of these cases, however, it is found that some other member of the family had had tuberculosis. Some of these may have resulted from contagion, however, in many instances of this kind, as, for example, when the person had grown and left home the patient may never have been at all intimately associated with the other member of the family who had tuberculosis, and there is certainly no *proof* when we consider the influence of heredity. A summary of these cases shows that in 1 instance the father only had died of pulmonary tuberculosis; in 12 the mother only; in 2, both father and mother; in 5, a brother only; in 5, a sister only; in 1, a son only, and in 1, a daughter only had died of pulmonary tuberculosis. All of these may have been the result of inheritance, and certainly they could not be taken as even circumstantial evidence of contagion. That only one should have inherited or acquired pulmonary tuberculosis from the father, but that twelve did from the mother affords an opportunity for interesting speculation. Was it because the young child was so much more with the mother than with the father? The answer would have to allow for the fact that after a father had become seriously sick with consumption he would be quite as likely to be with the children as the mother. Was it because the mother's milk contained the bacilli or because her depraved condition prevented the furnishing of adequate nutrition to the nursing infant? As these were all patients from 20 to 36 years of age, neither of these suggestions would seem to account for the condition. In studying this subject we must take into consideration the very great prevalence of tuberculosis, a fact which of itself would explain the occurrence of the disease in a considerable percentage of the patients in whom it has been attributed to contagion. I believe that by the most liberal estimate less than 2 per cent. of all cases of the disease result from contagion by association with another person having consumption.

Surgeons claim that 80 per cent. of the human family have tuberculosis in some form. Vital statistics show that 12 per cent. of the human family die of pulmonary tuberculosis, and the records from the dead-house show that 25 per cent. of those dying from other than pulmonary diseases have previously had and recovered from pulmonary tuberculosis, which has left distinct scars, therefore, there must be at least 37 per cent. of the human family who at one time or another suffer from pulmonary tuberculosis, and it is probable that the percentage is much larger. Tubercle bacilli have been demonstrated in the bronchial glands in about 40 per cent. of a series of cases of persons dying from acute injury who had never presented any evidence whatever of pulmonary tuberculosis. If this 40 per cent. be added to the 37 per cent. already found we find that 77 per cent. of the human family, at one time or another, harbor the tubercle bacillus either in the lungs or the bronchial glands. If careful examinations were made of all the mesenteric glands and other tissues of the body, it is probable that these bacilli would be found in nearly all; even from the evidence we now have it appears that practically every member of the human family, at least in civilized countries, harbors the tubercle bacillus in some part of his body at some time. Personally I doubt very much whether there is a person in this room who is not at this moment carrying about a greater or less number of tubercle bacilli.

For the sake of the argument let us admit that not more than 75 or 80 per cent. of the human family ever suffer from tuberculosis. An important thing to be considered in our efforts to prevent tuberculosis is that it also affects many of the lower animals, as cows, chickens, birds, monkeys, fish, etc., and also plants. The facts just presented indicate some of the difficulties which will be met in the outset of this undertaking. Notwithstanding the very great prevalence of the disease, as I have already shown, only a very small number can reasonably be supposed to have contracted it from other persons. It is commonly believed, though we must admit upon very insufficient evidence, that tuberculosis is nearly always caused by the inhalation of bacilli which have been taken up in the air from dry sputum; yet it is a well-known fact that these germs are usually destroyed by a short exposure to the air and sunshine. I am inclined to the popular belief, but we must admit that no one knows the origin of the bacillus. Pathologists have recently shown that these bacilli are often branching like the ray fungus of actinomycosis, and that their passage through cold-blooded animals produces bacteria morphologically very different from the Koch bacillus. Miller has succeeded in obtaining bacilli from grasses that are morphologically identical with the bacillus of tuberculosis. Much valuable information concerning the branching forms of the tubercle bacillus will be found in an article by Friedrich and Nösske (*Beitrage zur Pathologischen Anatomie und zur allgemeinen Pathologie*, Jena, 1899), and in the articles by Schulze and Mubarsch; the two latter will be found in *Zeitschrift fur Hygiene und Infectionskranheiten*. Among others who have worked with these actinomycelial forms of the bacilli are Coppen Jones, E. Klein, Babes, Dixon and H. Bruns. Lydia Rubenovitch has succeeded in obtaining the bacilli from butter, and the experiments of Strauss with cooked meat show that the bacilli may retain their virulence for a long time under most adverse circumstances and be introduced with the food.

When the state libels a person as a consumptive it places on him a brand like that of Cain, which can never be effaced. I have seen many patients who believed they had consumption, who insisted on not being told of it even though they came to me for a diagnosis. In the majority of cases that I see the friends request me not to let the patient know that he has consumption, believing as they do that it would work great injury to the sufferer. From my experience it is my impression that at least 75 per cent. of those having this disease do not wish to be told of it even by their physician, and it is my uniform practice not to tell a patient that he has it unless he requests the information, while it is comparatively rarely that one of these unfortunates asks me what is really the matter.

I am confident that a law requiring physicians to report to the state all cases of tuberculosis that come under their observation would cause patients and friends, from fear of being reported, in a large percentage of cases to avoid the physician as long as possible, thereby losing the most important, and in many cases the only, chance for successful treatment. Bringing the matter directly home, I would ask how many of you physicians would report to the state a case of consumption in your own household. I have no doubt that some would do so from conscientious motives, but I am quite as confident that the majority of physicians would feel that their duty to the patient required them to protect him from this stigma. Two results of such a law would be that many patients would not consult the physician until it was too late and that the majority of physicians would consider themselves in duty bound to protect their patients rather than to turn them over to the tender care of the state.

The branding of consumptives could not fail to be detrimental in many cases. To many a person the mere knowledge that he had consumption would be like a warrant dooming him to slow death, and of the 60 or 70 per cent. of those having pulmonary tuberculosis who now recover, many would die from the depression caused by the mortification, disgrace or despair of being thus pointed out. So true is this that I firmly believe that in many cases it would be much more humane for the state to give such persons an overdose of morphin or chloroform.

Our duty as physicians is not only to heal the sick but to comfort them and their friends, and I can hardly conceive of a more cruel thing, in some instances, than it would be to inform on them to the public officers, especially as there is

little reason to think that these officers could do any good to the patient or in protecting others. As not only friends but physicians would probably conceal the majority of tubercular patients as long as possible, if we had such a law, it could not be thoroughly enforced and it would be worse than useless. It will be urged that the good of the many must be considered, as in the case of diphtheria, scarlet fever and other markedly contagious diseases, but when we recollect that 80 per cent. of the human family have tuberculosis, the impracticability of such a law seems self-evident, and it appears clear that it would be much better to banish the 20 per cent. who can not be proved to have the disease, in order that they may be removed from its dangers. They certainly would be better able than consumptives to fight the battles of life alone. Even if the application of the law were confined to the 12 or 20 per cent. of the consumptives who can not be recognized even by the laity, we would have to reckon with very many hostile to the law because each of these consumptives has friends who would not tolerate his banishment. There are not a few who would object even to killing off cows and other domestic animals that might possibly be harboring the bacilli. With the tuberculin test tuberculosis in the lower animals can be readily detected, in most cases at an early stage, but it is not infallible; therefore, in order to be sure that we are getting rid of all of those infected it would be necessary to destroy a great number that were simply suspected, although a positive reaction may be accepted as practically a sure sign that the disease is present somewhere in the animal. If we could destroy all suspected animals and the 80 per cent. of the human family who have tuberculosis, it is a question whether the 20 per cent. that were left would be free from infection. As I have already stated, no one can tell whence the tubercle bacillus comes, and no one can be certain that he is not already tuberculous or that he is not at least harboring this omnipresent microbe. It does not appear to me practicable to quarantine or sequestrate those suffering from consumption.

From what I have said many may think me pessimistic and hopeless about the management of these unfortunate cases. This is not the case, but I have no sympathy with the extravagant views entertained by those who believe that the prevention of tuberculosis is to be carried out on the same lines as that of yellow fever, and who believe that if this be done the disease would be stamped out within a few years. Although libeling and quarantining tuberculous patients can not be satisfactorily carried out, and although it would be of doubtful utility if it could, I think there is much that may be done to check the spread of the disease, or to cure it in individual cases, in its early stages. Although we do not know where the tubercle bacilli come from, it is believed by most physicians that most patients acquire tuberculosis through the atmosphere from the dried sputum of tuberculous human beings, the only animals so far as I know that have the disgusting habit of spitting; therefore, everything practicable should be done to prevent expectoration on the streets or in other places where the sputum may become dried. This should apply not only to those who are recognized as tuberculous but by every one else, for it is probable that the majority of persons suffering from consumption recover before the disease is detected.

Friends and physicians should do all in their power to dissuade consumptives from marrying.

Children predisposed to consumption should be carefully watched to prevent deterioration in the general health and they should as far as possible be placed in good environment.

The most important thing in the prevention of consumption is attention to the general health, especially of children and young people, so that in case the bacilli find entrance into the system the local power of resistance may be sufficient to prevent harm. The person affected with consumption should, if possible, be immediately removed from a damp or otherwise deleterious atmosphere; the pale, feeble child should be kept in the open air as much as practicable and his diet should be carefully watched to secure proper nutrition. Such persons should be carefully clothed, sleep in well-ventilated rooms, and should not be overworked. The young man or young woman predisposed to consumption, if in school, should be carefully guarded to prevent excessive application to books and undue confinement. They should be induced to take an abundance of vigorous exercise, and they must be supplied with good food; if away from home they should be especially cautioned to shun poor boarding-houses.

Those having the responsibility for the young should attend at once to the first evidences of impaired nutrition or strength, and should not wait for the development of cough or other suspicious symptoms before they adopt proper methods for the prevention of disease. With the first evidences of the approach of tuberculosis, such as pallor, weakness, malaise, acceleration of the pulse and daily rise in temperature, symptoms often attributed to malaria, the best methods for detecting the disease should be at once adopted, and the measures most calculated to abort or cure the individual case should be instituted at once. Physicians and enlightened laymen should join forces in disseminating among the people a knowledge of the predisposing causes of this disease and of the methods best calculated to prevent or abort it.

In conclusion I would ask, should we have laws requiring all physicians to notify the state authorities whenever they find a patient suffering from consumption? To this I would answer emphatically, No! not only because of the injustice and inhumanity of such a law, but because it could not be enforced.

Shall consumptives be proscribed, sequestered or quarantined? To this I would also answer, No! because at best only a limited number of those so affected could be thus treated, because of the deleterious effects on the patients themselves, because these patients are sick and need sympathy and care rather than banishment, and because it would be cheaper and more humane to banish those who have never been infected by the tubercle bacillus.

DR. H. N. MOYER—In discussing the subject of the control of tuberculosis, there has been not a little narrow reasoning based on the idea that it was only necessary to catch and kill the germ of tuberculosis in order to stamp out the disease. This conception of the public health duties is reflected in the laws which it is urged should be adopted in the prevention of this malady. They include quarantine, notification, and other equally drastic measures. The essayist, and Dr. Ingals, in the discussion, both point out that such laws are foredoomed to failure. It is not practicable to try to stamp out the disease in this way. All that such laws can possibly do is to educate the people to the view that tuberculosis is to a moderate extent contagious, and that care should be exercised in the disposal of the sputum of these individuals, and that such a patient may be dangerous to those about him. The failure of attempting to stamp out tuberculosis by quarantine and segregation is shown by the efforts which have been made in Hawaii for the past twenty-five years, to banish leprosy. During all this period the Sandwich Islands have tried to enforce a law compelling lepers to live upon an island separate from their friends. Every effort is made to detect cases of leprosy, and, as soon as found, they are sent to the island. Most of those who have studied leprosy on the islands agree that all of these efforts have failed—that leprosy is now quite as common as it ever has been. This is due to the fact that people have no fear of the leprosy; that cases are concealed as long as possible, and that in this class of infections quarantine is of but little value. In diseases in which duration is short and the period of danger of infecting others is comparatively brief, then segregation may be useful. Such is not the case with tuberculosis. The histories of leprosy and tuberculosis are quite parallel.

Control of tuberculosis is to be effected by general hygienic methods which look to improvement of dwellings and food of consumptive patients. Much is to be hoped from the establishment of sanatoria, to which cases may be sent in their incipient stage. It is just as important that hospitals should be located for the care of this trouble as that we have hospitals for the care of those attacked by the acute infections. An individual should not be compelled to work in confined and ill-ventilated quarters until his lungs are so diseased that he can no longer follow his employment. He should be given a chance early in the history of the disease. This, however, should not

be compulsory. Medical men should not be compelled to inform on their patients, but the state should co-operate with them in securing early treatment for tuberculosis.

Legislation must always be behind and not in advance of public opinion. Public health laws which seriously interfere with personal liberty can only be enforced when an active public sentiment is behind them.

DR. E. KLEBS—I quite agree with Dr. Moyer that we must have public sanatoria, but how many? In Chicago alone we would require 20,000 beds. It is not possible to seclude all these patients—to take them away from their families, or the workshops or from the schools, but we must look to reducing this danger as much as possible. We must have physicians appointed to inspect schools; if a school inspector finds a child that expectorates an enormous quantity of tubercle bacilli each day, that child must be excluded from the school. The dissemination of tuberculosis in the workshop is another source; there should be an inspection of these people. If they can not be excluded, there must be means furnished by which the expectoration may be sterilized or destroyed. In tuberculosis, the state has very great duties to perform, and it is a matter for careful consideration; radical measures, however, should not be resorted to.

DR. A. R. REYNOLDS—I have never been able to make myself believe that good could be accomplished by insisting on exclusion of tuberculosis. I am of opinion that we already have law enough in the state to insist on tuberculosis being a notifiable disease, but I believe, with the essayist, that it would be a difficult matter to segregate patients. If a patient knows how to take care of himself, he need not be excluded. It is along this line that the laws must be shaped; the state can only help in disseminating this information. I think the public is well informed on these matters at the present time, considering that it is only a few years since the discovery was made; all understand that this is an infectious disease and are eager for information regarding protection against it.

I do not quite agree with Dr. Ingals in his assumption that patients do not wish to be told of their ailment, especially when I consider that 70 per cent. of his patients are consumptives. Although I have no reason to doubt his word, I can scarcely conceive that so large a percentage would shrink from a knowledge of their trouble. It is for this reason that they consult physicians, and if it were not for the skill that physicians have in diagnosing disease, the calling would not be so much sought as it is. In the treatment of consumption they are not altogether successful. This subject can not be discussed too often nor published too widely.

DR. JOS. MATTESON—I did not suppose that this was the popular side of this subject at the present time, judging from the extended discussion it is receiving and the number who seem to be in favor of excluding tuberculous patients. I have been gratified by the substantial concurrence of opinion expressed by the gentlemen who have discussed the paper this evening.

TRAUMATIC PERFORATIONS OF THE MEMBRANA TYMPANI.*

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PHILADELPHIA.

In 1500 consecutive cases taken from the out-patient record books of the Pennsylvania Hospital there were eleven in which the membrana tympani was ruptured by traumatism. The cases were as follows:

CASE 1.—An Irishman, aged 46 years, a longshoreman, was struck on the head by a hammer weighing 3 pounds, which had fallen forty feet. He sustained a severe lacerated wound of the scalp and was rendered unconscious for some minutes. On recovering consciousness, he was deaf in the left ear and suffered from much roaring noise in it. The left auditory canal contained considerable blood. There was a large laceration in the anterior lower segment of the left membrana tympani. At the end of three weeks' treatment his hearing was normal and he had no tinnitus.

CASE 2.—A longshoreman, five days previous to presenting himself at the dispensary, had fallen thirty feet, sustaining severe contusions of the head and shoulders. Ever since the accident there had been considerable bloody discharge from his left auditory meatus, and he had had much tinnitus in that ear and been totally deaf in it. Examination showed that while sound conduction through the external auditory canal was lost, bone conduction remained normal. There was a large perforation in the central portion of the left membrana tympani. This case pursued a very tedious course. Three months after the patient's first visit the discharge had ceased, but hearing was impaired and there was considerable tinnitus.

CASE 3.—A telegraph operator, aged 39 years, who one week before coming to the dispensary was poking in his left ear with a penholder, suddenly felt something give way and suffered a sharp pain and heard a roaring noise in his left ear, which at once became deaf. Next morning there was much bloody discharge. Examination showed his left external auditory canal full of bloody pus, and after careful cleaning a large ragged perforation was found in the lower posterior portion of the left membrana tympani. The handle of the malleus was fractured, the two fragments being bent on one another at an angle of 45 degrees. This man recovered perfectly in six weeks, the discharge ceasing, tinnitus disappearing and his hearing becoming as sharp as ever. His right membrana tympani was perfectly normal.

CASE 4.—An Italian musician, three weeks before presenting himself at the dispensary, had been struck by a very high sea-wave, while bathing in the surf. It knocked him down and when he arose and got out of the water, he found he was deaf in his left ear, and had much roaring and pain in it. The next day a bloody discharge made its appearance at the left external auditory meatus. Examination revealed a small amount of purulent discharge in the external auditory canal, and a linear, vertical perforation in the lower posterior segment of the membrana tympani. He remained under treatment for some weeks, and when last seen his discharge had stopped, but his hearing remained somewhat impaired, and he still had a slight amount of tinnitus.

CASE 5.—An Italian artist, who had received a blow on the left ear two days before coming to the dispensary, presented himself, complaining of deafness and roaring in the left ear. Examination revealed a considerable bloody muco-purulent discharge in the left external auditory meatus. On removing it, a large tear was visible across the center of the left membrana tympani. This man's discharge ceased in a few weeks, and his hearing was restored and the tinnitus checked.

CASE 6.—A married woman, aged 36 years, presented herself at the dispensary with a history of having received a blow on the left ear one week before. Since then she had been deaf in the left ear, and had had much tinnitus in it, andconsiderable bloody discharge. The left membrana tympani showed a large perforation, the definite location of which was not obtained at the first examination, and subsequently, through neglect, no note was made of it. This woman pursued a good course to complete restoration of function and cessation of symptoms.

CASE 7.—A laborer presented himself complaining of

*Read before the Philadelphia County Medical Society, Dec. 13, 1899.

pain, deafness and tinnitus in the left ear, from which there was considerable bloody discharge. He said that three days before, while working in a caisson these symptoms had suddenly presented themselves. Being a very unintelligent man, no more definite history could be obtained. There was a large perforation in the center of the membrana tympani. He recovered perfectly in a few weeks, except that when last seen he complained that he still had a sensation of fulness in his left ear.

CASE 8.—A Russian carpenter had been struck on the head eight days before coming to the hospital. No history was obtained as to how or with what he had been struck. He complained of pain and deafness. The right external auditory meatus was full of bloody pus, and there was a large ragged perforation in the right membrana tympani, the exact location of which, however, was not noted. The man did well and was discharged as cured in a few weeks.

CASE 9.—An Italian laborer was struck on the left side of his head with the handle of a pitchfork, one week before coming to the hospital. From that time he complained of pain, deafness and roaring in his left ear. There was a small amount of bloody discharge and a round perforation just posterior to the central portion of the left membrana tympani. Within ten days the discharge had ceased and function was restored.

CASE 10.—An errand boy, sent to the out-patient department from the wards of the hospital, had one week before fallen down an elevator shaft and sustained many lacerated and contused wounds of the scalp. From this time he had pain in the left ear and some deafness and tinnitus. Some bloody purulent discharge was removed from his left external auditory meatus; after this a perforation in the anterior lower segment of the left membrana tympani became visible. Within ten days the discharge and other symptoms had ceased.

CASE 11.—A laborer came to the out-patient department with a history that a heavy bag of corn had dropped on his head four days previously. Since that time his right ear had been the seat of continuous roaring noises, much pain, and considerable discharge. He suffered much from vertigo. After cleansing a considerable quantity of dried blood from the right external auditory canal, a large ragged perforation was revealed in the anterior lower segment of the right membrana tympani. His left membrana tympani was very opaque and considerably retracted. After treatment for about six weeks he was discharged cured, with complete restoration of function.

As to the relative frequency of such lesions compared with other pathologic conditions of the ear, it will be readily seen, by reference to the figures I furnish, and to those given in many statistical articles on the subject, that their number is not very great; this in spite of the fact that the injury is such as to produce symptoms which stand in such immediate relation as to cause and effect, and possess such an alarming significance in the patient's mind as to prompt his early recourse to a physician for relief.

Randall,[1] in a tabulation of 5412 cases of ear disease, found but five traumatic perforations of the ear drum.

Treitel[2] n 831 cases occurring in thirteen months in Professor Gottslein's clinic, found 18 of traumatic perforation.

Politzer[3] says that traumatic lesions of the drum may be produced: 1, by direct penetration of a foreign body into the membrana tympani; 2, by the extension of a fracture of the cranial bones to the membrane; 3, by a sudden condensation of air in the external meatus or in the tympanic cavity, more rarely by a rapid rarefaction of the external air. He gives the statistics compiled by Brigade Surgeon Chimani, from 5041 cases of ear trouble. Of these 54 were cases of traumatic perforation of the drum. They were caused in 38 cases by falls on the head, in 3 cases by a kick from a horse on the head, in 2 cases by strokes upon the head with wooden clubs, in 2 cases by the playing of brass instruments (signal trumpet and helicon), in 2 cases by the report of a loaded gun in the immediate neighborhood of the ear, and in 1 case by a fall into the water from a considerable height."

G. P. Field[4] analyzed 400 perforations of the membrana tympani and found that eighty of them could be attributed to traumatism. In a number of instances the perforations were double, so that the number of cases does not correspond to the number of perforations.

As to the causes producing these traumatic perforations, he found them to be: Falls on the head, 11 perforations; other injuries to head, 30; boxing ears, 8; from other blows on head, 16; penholder in ear, 1; hairpin in ear, 1; foreign bodies in ear, 4; kick of a horse, 1; blows from cricket balls, 2; injury from football, 1; fall of flower pot on head, 1; violent sneezing, 2; pouring turpentine in ears, 2; pouring urine in ear, 1; syringing by a doctor, 1; scald of ear, 1; silver nitrate used by patient in ear, 1.

The causes of the traumatic perforations in the cases I report were as follows: Struck by weight falling from a height, 2; fall upon head, 2; the result of introducing a foreign body, 1; struck by wave while bathing, 1; blow on ear—fist—2; working in caisson, 1; struck with weapon, 1; blow on head, but from what not ascertainable, 1.

But one of the cases which I report was the result of direct penetration of the membrana tympani by the introduction of a foreign body. This was Case 2 who penetrated his drum with a penholder with which he was scratching his ear.

Sajous[5] reports two cases from Turnbull's clinic, in which the perforation resulted from this cause. In one there was a fracture of the malleus similar to the one seen in mine, and appended to the article are references to cases of the same nature accompanied by a like fracture reported by Meniere,[6] Politzer,[7] R. F. Weir,[8] and Hinton,[9] with mention of a short notice of such a case with specimen in Toynbee's collection, now in the Hunterian Museum of the College of Surgeons of London.

Gorham Bacon[10] reports a case of perforation of the membrana tympani by the twig of a tree, which occurred in a man who was walking through some woods. He also[11] reports two other cases, one due to puncture with a piece of stick, the other occurred whilst scratching the ear with a pin.

A. H. Nott[12] reports the case of a man whose left membrana tympani was ruptured by the penetration through it of an umbrella rib. The injury resulted in the entire loss of the sense of taste on the left side of his tongue.

A most interesting case from a medicolegal point of view is reported by A. S. Barling.[13] A man, while in a brawl, was stabbed in the right ear with a knife. The knife blade was so very thin that it caused no external wound, but produced an incised one of the membrana tympani, one-fifth of an inch long, just posterior to the handle of the malleus; this wound was only found after careful examination. There was considerable hemorrhage. At first a defense was made that no stabbing

had been done, although the victim insisted that his assailant had a knife in his hand. Finally, after some interval of time, the knife was found near the scene of the assault, where it had been thrown away by the aggressor as soon as he had done the stabbing.

Urbautschitsch[14] reports a case in which a man attempted suicide by shooting himself in the right temple. The bullet could be detected through the external auditory meatus in the tympanic cavity. It was extracted by chiseling away the surrounding bony structures.

A. M. Shield[15] saw an interesting case in which molten lead had been splashed over the side of the patient's head and some had run into his right external auditory meatus, almost entirely filling his tympanic cavity, some even entering the Eustachian tube. The lead was removed by filling the ear with liquid mercury and allowing it to remain in the ear for sixteen hours, when the softened mass was easily syringed out.

Among other interesting cases of penetration of the membrana tympani by foreign bodies introduced through the external auditory canal may be mentioned those reported by Mandelstamn,[16] Treitel,[17] F. L. Jack,[18] Barr,[19] Tangeman,[20] Braislen,[21] L. S. Somers[22] and A. H. R. Stewart.[23]

Oftentimes the drum is perforated during clumsy efforts at extraction, as in one of Bacon's cases, and not by the unaided impact of the foreign body.

Cases of rupture of the membrana tympani due to syringing the ear are not rare. Such cases are reported by S. Latimer Phillips[24] and Sexton.[25]

In all the above-mentioned the foreign body causing the perforation was introduced through the external auditory canal. Cases have been reported, however, in which the membrana tympani was perforated by a foreign body entering the tympanum through the Eustachian tube. P. Hoover[26] reports such a case in a child 2 years old, who swallowed a pin, which subsequently emerged point first, through the membrana tympani. The child had been given an emetic, and it was probably forced into the Eustachian tube by the effort of vomiting. L. W. Reynolds[27] reports a curious case occurring in a woman who was suffering from the vomiting of pregnancy, and in her expulsive efforts ejected a number of round worms from her mouth, nostrils and both ears. The drums were torn and free bleeding from both external auditory meati occurred.

None of the cases in the series I report were due to extension of a fracture of the cranial bones. Cases of this nature are reported by J. M. Ray,[28] Gorham Bacon,[29] Cornelius Williams,[30] J. D. Rushmore,[31] Scheibe,[32] A. Alt[33] and R. Barclay.[34]

In the 11 cases which I report there were 4 patients with perforation of the membrana tympani due to the sudden condensation or rarefaction of air in the external auditory meatus, beyond a doubt. Three more could be with probability assigned to this cause. One of the latter had been struck on the side of the head by a bag of corn falling some distance, another had been struck in a quarrel, most likely by his opponent's fist, the third had received a blow directly over the ear from the blunt handle of a pitchfork. Of the 4 undoubted cases, 1 was the result of the impact of water, 1 resulted from working in a caisson, and 2 were the results of blows with the fist.

Probably the latter is the commonest cause of perforation due to sudden condensation of air in the external auditory meatus. In the cases which result from it the lesion is usually unilateral and found in the left membrana tympani, because the person who strikes does so with his right hand as a rule. In former days, when boxing the ears was a popular manner of administering reproof in school, the number of cases of perforation resulting from this form of punishment is said to have been very large. One recalls the method of punishing school boys by boxing both sides of the head simultaneously with two books, referred to by Thackeray in his Roundabout Paper entitled "De Juventute." In Chimani's 38 cases of rupture of the ear drum due to blows with the fist, 36 were in the left ear, only two in the right.

Dalby[35] says that the injuries resulting from boxing ears are of three kinds: 1. The hearing may be immediately damaged without injury to the membrana tympani, the loss of hearing being due to injury of nervous structures. 2. The membrana tympani may be ruptured, the perforations usually assuming the form of a vertical slit which, if left alone, heals in a few days, though occasionally suppuration is seen. 3. Without rupturing the membrana tympani an acute otitis media may occur, with possible ultimate perforation of the membrana tympani and loss of hearing.

Cases resulting from blows with the fist upon the ear are reported by C. R. Agnew,[36] Dills,[37] Core,[38] Gorham Bacon,[39] Treitel,[40] H. Richards,[41] W. H. R. Stewart,[42] A. A. Hubbell,[43] Fetterhoff,[44] Braislin[45] and R. Barclay.[46] C. R. Agnew and D. Webster[47] and A. H. Cheatle[48] report cases of double perforation of the membrana tympani resulting from blows with the fist.

Cases of rupture of the tympanic membrane from the condensation of air produced by discharge of artillery or the explosion of powder are reported by Sexton,[49] Bates,[50] and C. C. Colles.[51]. C. H. Alden [52] reports a case of repeated ruptures of the membrana tympani occurring in an artilleryman, finally resulting in total deafness, requiring his discharge from the service. Moos[53] reports one of a chemist who was working with some chloraphthalic ether which exploded. Both of his membanæ tympani were ruptured as a consequence, and he developed a suppurative otitis media.

Cases of traumatic perforations of the membrana tympani as the result of working in caissons or diving bells have been reported by Moos,[54] Sexton,[55] G. E. Bellows.[56]

Two interesting cases of loss of hearing due to condensation of air in the external auditory canal, by the impact of water in diving, are reported by H. Augustus Wilson.[57]

Of air pressure on the inner surface of the membrana tympani causing rupture, I have gathered three cases: A. G. Welsford[58] reports a man who suffered from chronic bronchitis, and during a violent coughing spell ruptured both ear drums. S. L. Phillips'[59] patient with perforation due to syringing the ear, subsequently sustained another rupture of the same drum while blowing his nose. C. R. Agnew[60] reports the case of a man who ruptured his left membrana tympani while blowing his nose. Agnew thinks there was undoubtedly pre-existing disease of the membrana tympani, but the man positively denied ever having noticed any previous trouble with his ear. E. D. Clark[61] reports one in which a man was struck by lightning, sustaining burns of the left side of the head, the neck and breast. Some days after the accident the ear began discharging pus, and an examination revealed a perforation in the left membrana tympani. The auricle had not been injured in any way. The difficulty in this case lies in deciding whether concussion caused the perforation, or whether it was due to a burn produced by the lightning. The perforation

healed, but the man remained deaf and suffered much from tinnitus. Ludewig[62] reports a case in which the drum membrane was undoubtedly ruptured by the shock of the lightning bolt.

The location of the perforation in the drum membrane varies with the cause producing it. In those cases due to penetration by a foreign body, Politzer states that it is more frequently in the posterior than in the anterior portion of the drum; when due to extension of a fracture of the cranial bones, the perforation extends fissure-like from the superior or anterior wall of the meatus, and, if resulting from sudden condensation of air in the external auditory meatus, it presents itself as a gaping orifice, more frequently in the posterior portion of the membrane. Treitel[63] carefully studied eighteen cases of traumatic perforation, in 11 of which the perforation was in the inferior half; of these, 8 were in the anterior inferior portion, and 3 in the posterior inferior portion, from which he concludes that the inferior and anterior portions constitutes the elected region. This statement agrees with Schwartze, but differs from Hassenstein, who considers a traumatic perforation in front of the malleus as very rare. Treitel makes the statement, which is now acceded to by most authorities, that rupture of the drum from sudden condensation of air can occur in the perfectly healthy drum and with a free Eustachian tube, but that it is more apt to occur in persons whose Eustachian tube is not perfectly patulous or who have ear drums which have been the site of previous pathologic changes. In Chimani's 38 cases of rupture due to boxes on the ear, 27 were in the posterior inferior quadrant, 9 in front of and below the malleus, 2 in the posterior superior portion of the membrane.

As to the ultimate termination of such injuries, if the perforation is uncomplicated with injury to the ossicles or labyrinth, the prognosis is good, the perforation usually healing. In Nott's case, which was followed by loss of taste on the injured side, there was evidently accompanying injury to the chorda tympani. All authorities agree that the best possible treatment is to leave the handling of the case to Nature as far as possible. In those I report a little clean, dry cotton was kept constantly in the external auditory meatus, and no attempt made to do anything beyond the gentlest possible cleansing in cases where there was much discharge. In Chimani's 38 cases of perforation due to boxing the ears, perfect recovery without functional disturbance occurred in 34; in 4 only complete cure was effected.

Cases of traumatic perforation of the drum present several points of medicolegal importance: 1, to determine that the rupture is due to traumatism; 2, to determine the amount of permanent functional or organic damage wrought by the injury, if it exists.

In the 1500 cases from the books of the out-patient department of the Pennsylvania Hospital, there were 3 in which it was claimed that the patient's ear condition resulted from an injury. One was a man who claimed to have fallen from a trolley car. He had chronic suppurative inflammation of the ear, which, he said, had only begun to suppurate since the accident. That this was chronic was proved by the fact that the ossicles were necrosed, and, moreover, there was evidence of old mastoid trouble, notwithstanding the fact that the injury was said to have been sustained only a few days before his visit to the hospital. The other two cases in which injury was claimed were both school children, whose ears were said to have been boxed, but in whom careful examination and questioning elicited history of previous suppuration. Politzer says that the most definite evidence of the traumatic origin of a perforation is its rapid cicatrization. The only way in which the amount of functional disturbance can be determined is by repeated careful tests of the hearing power by the usual methods employed for that purpose. Much care must be taken in these tests to detect simulated deafness, as in many of these cases the examination is required to determine the claims for damages of the patient. It must always be remembered that the amount of disturbance of hearing bears but little proportion to the amount of destruction of drum tissue. Patients are frequently seen in aural clinics who have suffered complete destruction of the drum and yet retain their hearing to a remarkable extent. In cases of traumatic perforation which are accompanied by labyrinthine involvement the amount of labyrinth mischief will be the chief guide as to the functional disturbance which the patient's organ of hearing has sustained.

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BIBLIOGRAPHY.

1. Annals of Ophthal. and Otol., 1894, iii, 59.
2. Transl. in Arch. of Otol., 1890, xix, 110.
3. Diseases of the Ear.
4. Med. Press and Cir., 1886, xxx, 85, 169.
5. Med. and Surg. Reporter, 1879, p. 161.
6. Gaz. Med. de Paris, 1856, No. 50.
7. Diseases of the Ear.
8. Trans. Am. Otol. Soc., 1870.
9. Questions of Aural Surgery.
10. Trans. Am. Otol. Soc., 1882, iii, p. 541.
11. N. Y. Med. Jour., 1887, xlv, 513, and N. Y. Med. Rec., 1885, xxvii, 403.
12. Indian Med. Gaz., 1893, xxviii, 13.
13. Brit. Med. Jour., 1897, ii, 1180.
14. Jour. of Laryng., Rhinol. and Otol., 1897, xii, 255.
15. Lancet, 1892, i, 970.
16. Archives of Otology, 1891, xxi, 128.
17. Transl. in Archi. of Otol., 1890, xix, 110.
18. Boston Med. and Surg. Jour., 1891, cxxiv, 50.
19. Edinburgh Med. Jour., 1887-88, xxxiii, 613.
20. Cincin. Lancet and Clinic, 1885, xv, 649.
21. Brooklyn Med. Jour., 1898, xii, 9.
22. Phila. Polyclinic, 1897, vi, 104.
23. Lancet, 1889, i, 574.
24. Atlanta Med. and Surg. Jour., 1890-91, vii, 707.
25. The Ear and its Diseases.
26. N. Y Med. Jour., October 30, 1897.
27. Lancet, 1880, ii, 653.
28. Archiv. of Otol., 1886, xv, 192.
29. Loc. cit.
30. Arch. of Otol., 1884, xiii, 156
31. Arch. of Otol., 1881, x, 315.
32. Arch. of Otol., 1897, xxvi, 400.
33. Am. Jour. Ophth., 1884, i, 39.
34. Med. and Surg. Reporter, 1894, xx, 158.
35. Brit. Med. Jour., 1882, ii, 1249.
36. Med. Rec., 1880, xviii, 169.
37. Archiv. of Otol., 1880, ix, 154.
38. Peoria Med. Monthly, 1881-82, ii, 128.
39. N. Y. Med. Rec., 1885, xxvii, 403; also N. Y. Med. Jour., 1887, xlv, 513
40. Archiv. of Otol., 1890, xix, 110.
41. Trans. Am. Otol. Soc., 1889, 477.
42. Lancet, 1889, i, 574.
43. Buffalo M. and S. Jour., 1888-89, xxviii, 202.
44. Reported from Seiss' Clinic in Univ. Med. Mag., 1895, viii, 617.
45. Brooklyn Med. Jour., 1898, xii, 9.
46. International Clinics, 1894, iii, 354, and General Practitioner, 1896, ii, 11.
47. Archiv. of Otol., 1881, x, 339.
48. King's Coll. Hosp. Rep., 1894-95, ii, 261.
49. N. Y. Med. Rec., 1887, xxxi, 201.
50. N. Y. Med. Jour., 1892, lv, 72.
51. Am. Medico-Surgical Bulletin, 1896, x, 655.
52. Rep. Surg.-Gen. of the Army, 1885-86, 87.
53. Archiv. of Otol., 1881, x, 100.
54. Archiv. of Otol., 1881, x, 100.
55. N. Y. Med. Rec., 1887, xxxii, 732.
56. Kansas City Med. Rec., 1890, vii, 150.
57. Med. News, 1882, xli, 173.
58. Brit. Med. Jour., 1894, ii, 68
59. Loc. cit.
60. Med. Rec., 1880, xviii, 169.
61. Archiv. of Otol., 1892, xxi, 34.
62. Archiv. f. Phreuhk, 1889-90, xxix, 237.
63. Transl. in Archiv. of Otol., 1890, xix, 110.

MANY HAVE a history of specific disease in early life, with no symptoms after the first two or three years following the initial lesion, and then are troubled in late life.—*J. Nevins Hyde.*

THE USE OF ADRENAL SUBSTANCE IN THE TREATMENT OF ASTHMA.

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The experience I have to submit in the use of adrenal substance in this particular connection, is of but little importance, except as a link in a chain of studies.

The synthesis of disease—i. e., the manner in which syndrome groups are built up, and the reason of their association—is beginning to attract the attention of students who recognize that pathology is something more than morbid anatomy or bacteriology.

That wonderful system of compensations found throughout all Nature, the balanced action of contending forces producing mobile or stable equilibrium, and the motion that takes place in the direction of an inferior force, are not merely problems of physics, but also of biology, and of that special branch of biology which deals with the disturbances we call disease. The disruption of a planet, the aberration of a comet from its calculated orbit, may differ in magnitude from the destruction of an animal cell or the aberrant action of the heart and vessels, but essentially the same forces are at work. Provocatives in such disturbances are often forces of the environment, but sometimes the disturbing elements arise within the animal organism itself. Often the nature, and nearly always the order—for in Nature there is always order in disorder—of succession of these disturbances depends on the inherent properties of the organism attacked rather than on the attacking agent—be this microbian, chemical, or less tangible than either.

Within the human economy, a constant struggle of opposing activities—or perhaps it would be more accurate to say tendencies to action—results in orderly growth, development and function. The agents of these activities or tendencies are cells and their products. Deficiency or excess may lead directly to disorder or render order so unstable that it is easily overthrown by slight addition to the forces acting in some special direction.

We have not yet learned to realize the large part that the activities of the blood-vessels may take in determining symptomatology and lesions. A and B may both be exposed to the same storm, and the same incidence of pneumococci, yet A may escape and B suffer with lobar pneumonia. Why? Possibly, even probably, because B's vascular tone is more readily overthrown than A's, because the branches of his bronchial arteries are through permanent or temporary relations of vasomotor control, more readily paralyzed, permitting congestion to occur, and favorable culture conditions for the cocci to be established. But the same instability of vascular tone which, under certain conditions, leads to the development of pneumonia may, in other degrees and under other conditions of internal metabolism and of incidence of external forces, lead to other morbid phenomena, perhaps to Graves' disease; or will modify the symptomatology of visceral diseases or infectious fevers; or will be manifest in certain so-called idiosyncrasies to drugs or articles of diet. Thus a varied and apparently unrelated semeiology may be correlated with some structural, functional, or metabolic condition peculiar to the individual or, more frequently, to classes of men; and these peculiarities may be acquired or congenital.

On the other hand, a certain symptom-complex, or symptoms-complex closely similar, may arise in different individuals, not only from different causes but even by apparently opposed mechanisms. Thus we can distinguish between two varieties of hemicrania, the one due to vascular spasm—anemic migraine—the other to vascular paresis—congestive migraine; the syndrome accordingly being relieved by nitrites and aggravated by adrenal substance, if spasmodic; or aggravated by nitrites and relieved by adrenal substance, if paretic.

Similarly I look on asthma, not as a definite nosologic entity, but as a morbid condition symptomatic in its nature and associated with various and varying pathologic processes and physical states. Every form of dyspnea, however, can not properly be called asthmatic, even those forms that by common consent have come to be designated as cardiac asthma and renal asthma; and while the former is sometimes susceptible of relief through the action of adrenal substance on the heart and vessels, I shall not in this paper refer to such cases.

Without restricting the term asthma, as is the tendency of most modern authors, to the typical paroxysm of dyspnea, arising suddenly and terminating with equal suddenness, it is, nevertheless, distinctly a paroxysmal disorder, arising independently of gross lesions of the circulatory, respiratory or excretory systems; although it may be associated with any or all of these, and be the more readily provoked through such association.

The disputes over its pathology are probably due to onesided studies of one or another variety. Basing my opinion purely on clinical studies, as the question could scarcely be decided post-mortem, I have no doubt that in certain cases of asthma the immediate mechanism of the paroxysm is bronchial spasm, not only muscular but also frequently vascular; though perhaps in many cases of vascular spasm the pulmonary rather than the bronchial vessels are affected. I have equally no doubt that in other cases the immediate mechanism of the paroxysm is dependent on irregular turgescence of the bronchial mucosa; and equally no doubt that in some cases turgescence of the bronchial mucosa is preceded, accompanied or succeeded by inflammatory or subinflammatory conditions, associated with exudation into the bronchioles. Again we find, as an underlying diathesis in some patients, gout or, if that term be preferred, lithemia; in others rheumatism. In some patients, but by no means all, nasal abnormities exist. They may be causative or merely coincident; the most intractable case I have had was in a man from whom I removed a large nasal polyp and in whom, although the relief to nasal breathing was marked, the asthma persisted. In other cases abnormities of the upper pharynx, of the lower pharynx, of the tongue, of the thyroid gland are found. In one case, referred to me by Dr. Weir Mitchell, there was tonic spasm of one vocal band apparently due to pressure by a hardened right apex upon the recurrent laryngeal nerve. In this case several nasal polypi had been removed by the late Dr. Harrison Allen without relief to the tendency to asthmatic paroxysms. Many patients subject to asthma are highly neurotic and some have hay-fever; the asthma occurring both in association with this latter syndrome and during times of freedom from nasal and ocular symptoms. In other cases there is associated with the tendency to paroxysmal dyspnea, a paroxysmal albuminuria; the latter occurring both during the period of respiratory distress and during the intervals of freedom, although in some instances they may seem to alternate.

In this outline I have not attempted to exhaust the list of associations, but merely to indicate the great variety of the conditions under which asthma may be manifested

as one of a group of symptoms, or even as the single prominent symptom of a general disorder.

Adrenal substance is not applicable to the treatment of all asthmatic patients or to all varieties of asthma. It is applicable in the treatment of some of those in whom this affection is associated with other manifestations of what I have elsewhere termed vasomotor ataxia,[1] of the relaxing variety. Under this head I include, among others, patients who are subject to urticaria or in whom factitious urticaria may be readily produced; those who are, vascularly, extremely sensitive to slight changes in weather and climate, or who exhibit peculiar idiosyncrasies in this respect, as in their reaction to drugs; those whose cardiovascular balance is easily disturbed by emotion or by digestive disorder or other slight intoxication; some hay-fever subjects; persons subject to congestive hemicrania; and those who show signs of renal leakage, either by intermittent albuminuria, or by the occasional presence of red blood-cells in the urine, without decided hematuria and without the persistent presence of tube casts; in whom, therefore, we are dealing with what may be termed functional rather than organic renal lesion. By the apparent paradox of "functional lesion," I do not mean to imply the absence of structural change—on the contrary, to indicate that there is a distinct structural —or perhaps it would be better to say "compositional"— abnormity, not sufficiently gross to be detected by our present methods of research. But this abnormity in the great class of patients herewith included is congenital and is thus, as it were, normal to the individual.

Whether it be metabolic or of other nature in ultimate analysis is a subject too recondite for present discussion. Biochemistry and biophysics are neither sufficiently advanced to answer. Clinically, however, the fault is found in the vascular taxis.

Believing that in such cases the immediate mechanism of the obstruction to respiration, manifested by the asthmatic paroxysm, is an irregular swelling of the bronchial mucosa, allied to the condition of circumscript edema—angioneurotic edema—or urticaria, and that by increasing the vascular tone through the administration of that substance which Nature seems to have designed for its maintenance, we might prevent such attacks, I have, during the last few years, used adrenal substance in the treatment of such patients. It has in but one dubious instance served to cut short a paroxysm, though it has occasionally mitigated distress in greater or less degree. It has, however, been useful in averting the recurrence of paroxysms and in finally bringing about a state of freedom from fear of their recurrence. I, therefore, speak of the use of adrenal substance not as "a treatment for asthma" but as a measure "applicable in the treatment of certain cases" of that affection. Physicians accustomed to exactitude in language will readily discern the difference between these methods of statement.

As illustrative both of the usefulness and of the limits of usefulness of this agent in the management of certain cases of asthma, the following case may be given in outline:

Miss X. Y. Z., aged 22 years, was first seen in consultation, at Atlantic City, in June, 1897. She was then confined to bed with constant dyspnea, aggravated in paroxysms, the paroxysms occurring at night and relieved after an hour or two of orthopnea by critical expectoration of large quantities of a thin watery fluid. During the day this expectoration would continue in less degree, but would cease during sleep. Sleep would be broken in on by the asthmatic paroxysm and return with the re-establishment of the discharge. Attacks of excessive rapidity of the heart and paroxysms of distressing sweating were also complained of. It was stated that this condition had followed an attack of influenza which occurred during the preceding February, since which time the patient had not been out of bed. She was feeble, nervous and apparently anemic, but not hysterical. The temperature ranged between 99 and 100.5 F., irregularly. Physical examination gave hyperresonance of the upper portion of the right lung; normal resonance elsewhere, and diffuse mucous, sonorous and sibilant râles in all portions of the chest. The heart was feeble and rapid, rate 96. No murmur was heard. Precordial dulness was perhaps slightly enlarged. This was during a period of comparative quiescence, the respirations being shallow and slightly accelerated to 24 to the minute, and considerable subjective distress being complained of, but no asthmatic paroxysm being manifested. Dermographism was readily produced; the nails showed typical red crescents and were of a peculiar lemon tint not due to artificial coloring. The father of the patient was said to have died of asthma and tuberculosis, following pneumonia. At that time, eight years previously, the patient had suffered similarly to the present attack but not for so long a period. Examination of the patient's sputum for tubercle bacilli had not been made during either attack. The urine was free from albumin.

Apart from diet, the treatment tentatively advised was the injection of very small doses of hyoscin hydrobromate with morphin and strychnin at night, for at most three consecutive nights, and during the day the use of a mixture containing ammonium bromid. Iron preparations and syrup of hydriodic acid had been used without much good effect. Slight relief followed. The patient was brought to Philadelphia in July, where she was placed under the care of my friend Dr. Eshner, with whom I again saw her in consultation. Examination of the urine now showed the absence of albumin; examination of the sputum showed the absence of tubercle bacilli, and examination of the blood showed reduction of red corpuscles to about 70 per cent. and hemoglobin to about 60 per cent. of normal.

The treatment proved to be most difficult. Apart from hygienic and general tonic treatment, many approved remedies were used without benefit. Some of the drugs that gave greater or less relief may be mentioned. Atropin checked sweating and expectoration temporarily, but the symptoms recurred in greater degree on its withdrawal. Picrotoxin was employed on the theory that the paroxysms were due to vasomotor paresis with turgescence of the bronchial mucosa. This gave some relief, but recovery seemed still distant. Thymus gland substance gave better results, but asthmatic paroxysms still recurred. Albumin appeared in the urine. It was then determined to use adrenal substance. Burroughs & Wellcome's tablets, 5 grains each, were prescribed once daily, then twice, then three times daily, and finally the patient for a short time took 90 grains daily. A striking improvement shortly became manifest. The constant dyspnea first disappeared, then the paroxysmal nocturnal attacks became less frequent and less severe. Recovery was not rapid but was continuous.

In October the patient was able to go out of doors, and inhalations of compressed air with exhalations into rarefied air were then added to the treatment for its effect as a method of neuromuscular gymnastics, as also for direct effect on the blood-vessels at fault. The albuminuria noted was intermittent and disappeared after ten months. Since this time the patient has had no recur-

[1] Am. Jour. Med. Sci., February, 1894.

rence of symptoms similar to those of the original attack; though being allowed to go without medicine on account of the improved condition, there is at times recurrence of albuminuria, which quickly disappears under treatment with adrenal extract; and once there was a brief attack of dyspnea with asthmatic exacerbation, which likewise yielded quickly to treatment. While it is obvious that dependence in this case was not placed alone on the adrenal substance, yet its marked effect in heightening the tone of the blood-vessels, in diminishing and finally checking the peculiar expectoration, and its similar effect on the night sweats, favor the belief that it was an active agent in the control of the asthmatic symptoms. The tachycardial paroxysms had ceased before it was administered—under the influence of rest, medication, and allaying of fear.

In other patients the result has been about the same as that already narrated. Hyoscin, morphin and strychnin have been given for immediate control of paroxysms, sometimes aspidospermin or other appropriate remedy for the quick relief of dyspnea, and adrenal extract for control of the underlying condition.

It would be wearisome, as well as useless, to detail histories. Apart from so-called hay-asthma—which is another story and belongs to another speaker—success has been reached only in those cases, about twelve in the course of a little more than two years, in which from the crescentic markings on the nails, from the tendency of the hands to excessive color changes, or to sweating on slight temperature variations, from the facility with which dermographism or factitious urticaria could be produced, from the enlargement of the thyroid gland, from the tendency to cardiac palpitation, or even tachycardia, or from the occurrence of other vasomotor crises, such as migraine or angioneurotic edema or nervous vomiting, or if necessary from the *experimentum crucis* of increased distress on inhalation of amyl nitrite—one could recognize the tendency of the subject to loss of control of vascular tone on slight provocation. In one case the paroxysm of asthma—or perhaps of obstructive dyspnea—was preceded by angioneurotic swelling of the tongue, and when this was reduced by the prompt local application of suprarenal extract, the paroxysm was averted or modified in severity. It was interesting to note that in this case the swelling of the tongue was not always followed by dyspnea, but sometimes by a gastric crisis, of pain, or less frequently, vomiting of a thin, tasteless fluid. I never saw these attacks, and, therefore, rely entirely on the description of the patient and her physician. The circumscribed swelling of the tongue I saw in my office, but it was promptly reduced by suprarenal substance locally, and no other manifestation followed.

I believe that we have in this substance a decided addition to therapeutic resources; quite active when used locally, and hence to be remembered in the prompt treatment of urticaria or edema of the upper air-passages —and less active, but still definitely useful by internal administration in controlling urticaria or circumscript edema or similar condition affecting the bronchial mucosa.

It is not a specific for asthma. It is without good influence, perhaps capable of bad influence, on cases that are really spasmodic; that is, due to contraction of the bronchial muscles. But it is of definite use in that perhaps smaller number of cases of asthma in which, as I have indicated, the paroxysm is but one other manifestation of a congenital fault of structure or of metabolism, affecting the vasomotor system and thus permitting the cardiovascular balance, and especially the tonicity of the blood-vessels, to be readily overturned by exciting causes that would have but slight, if any, effect on other individuals. In such cases a more or less continuous administration of adrenal substance, in sufficient quantity to maintain the vascular tone, will act as a preventive, enabling the reactive forces of the individual to combat more successfully the toxins of internal and external origin, the emotional, meteorologic, thermal, and climatic influences, and other sources of disturbance that ordinarily provoke the paroxysm.

As to its dosage, the rule is that of Professor Ellerslie Wallace for bleeding in puerperal eclampsia—"Enough." There is great difference in cases and in individuals. Beginning with small doses frequently repeated, e. g., 1 grain every hour or every two hours, or with a moderate dose, say 5 grains, once or twice daily, we learn the tolerance of the individual, the tractability or intractability of the symptoms, and regulate accordingly. I have given as few as 3 and as many as 90 grains of the desiccated gland substance in the twenty-four hours. Five or 10 grains every second or third hour during waking hours is a fair dose. In some cases, however, the unnecessary animal substances retained in the preparation give rise to diarrhea with offensive discharges. If we could have the active agent alone our therapy would be much more definite.

What the active agent is and how much or how little of that active agent is absorbed, I must leave to laboratory students to determine. Clinically I have watched closely and critically enough to satisfy myself that neither the susceptibility of patients to suggestion, nor the activity of the observer's imagination are sufficient in themselves to account for the whole of the results.

ETIOLOGIC STUDIES ON NEUROSES OF PERIPHERAL ORIGIN.*

BY H. GRADLE, M.D.
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Medical opinion concerning the frequency and importance of the so-called reflex neuroses has fluctuated considerably within past years. The claims made by American ophthalmologists regarding the effects of eye strain, the startling results announced by Hack and his followers concerning the cure of reflexes of intranasal origin and to some extent, too, the views of gynecologists as regards the etiologic rôle of pelvic anomalies in the production of nervous symptoms have made "reflex neuroses" a topic of the day. But criticism is beginning to show how and wherein some of the enthusiasts have erred, and perhaps an undue skepticism is beginning to prevail. One of our members has not inaptly characterized the trend of medical opinion as "the passing of the reflex." Yet by properly defining the term "neuroses of peripheral origin" it can be made to include a great deal of human suffering, which may be relieved by the knowledge of its etiology.

I do not consider the name "reflex neurosis" an appropriate one, since the definition of "reflex" in physiology implies the motor or centrifugal response of a nerve-center to an impulse coming through a sensory nerve.

Hence, most of the neuroses of peripheral origin do not come under this definition. Even when a motor phenomenon does occur, it depends on the influence which the peripheral stimulus exerts on the excitability of the nerve-center, and is generally not a mere exaggeration of a physiologic reflex.

*Read before the Chicago Neurological Society, Jan. 18, 1900.

The peripheral origin of a neurosis in a given case may be suggested by the coexistence of a peripheral lesion or anomaly likely to cause it, especially when a clear history of aggravation can be obtained under circumstances which can intensify the peripheral stimulus, for instance, when a headache is brought on by use of the eyes or when an attack of asthma follows nasal irritation. But the absolute proof can only be furnished by the prompt cessation of the neurosis after elimination of the peripheral influence. If a relapse occurs, as it sometimes does in asthma of nasal origin, and it can be shown that the peripheral condition had returned because of its incomplete removal, the etiologic relationship is only more firmly established.

As a basis for further discussion I shall hence refer only to such instances in which this convincing proof exists, either in cases of my own observation or in well-recorded reports in literature. The following are well substantiated examples of neuroses of peripheral origin.

Errors of refraction and accommodation may lead to headache, a feeling of pressure in the head, less frequently to vertigo, and even nausea. Astigmatism may bring on periodic attacks of migraine. Suppuration of the nasal passages or accessory sinuses and also intranasal tumors—polypi—may cause headaches, either constant or periodic neuralgic pains, oppression in the head, asthmatic attacks and circulatory and cardiac disturbances.

In some instances these neuroses are started from the nasal lining even in the absence of any other lesion except enlargement and liability to turgescence of the submucous cavernous tissue. Pharyngeal disease may cause cough and laryngeal spasms. Dental disease may induce headache and neuralgia. Outside of my own sphere of observation, but scarcely subject to doubt, is the backache of pelvic disorders.

While the actuality of all these instances can not but be admitted even by skeptics on the subject of "reflex neuroses," the term "neuroses" may be objected to as improper. But we understand by that term any nervous disturbance not dependent on demonstrable lesions in the nervous system and not the normal consequence or symptom of disease of a peripheral organ, and hence the term "neurosis" is proper in the present place.

Much has been described under the head of reflex neuroses that can be severely criticised. Epileptoid convulsions have been reported as of "reflex" origin by many authors. Some of their observations are undoubtedly correct, but not all and not even many of them. After all, the number of cases of spasms permanently stopped by the excision of peripheral cicatrices is very small, although such instances have occurred. Similarly there are a few reports in which years have elapsed without the recurrence of epileptoid fits after the fitting of proper glasses or the removal of nasal polypi, but they can be counted on the fingers. Personally I have seen petit mal with laryngeal spasm in an infant cease promptly after a duration of many weeks, on curing a pharyngitis by nitrate of silver application. As this occurred twenty years ago, and the patient—now a young man—has never had another attack, I consider this a well-established instance of epilepsy of peripheral origin—but it is the only case I have ever observed.

Similarly we must admit the symptom-group of exophthalmic goiter as a possible but excessively rare neurosis of peripheral origin. There are five well-observed instances on record of total disappearance of all symptoms of Graves' disease after intranasal treatment, while in one other the symptoms of this disease came on immediately after a nasal cauterization.

Chorea, too, has often been described as a neurosis of ocular origin. But I can not say that I have seen any reports which to me seem convincing proof of this assertion. I have never seen chorea influenced by the optic correction of an ocular defect, although I have given glasses for good reasons to many such patients at an early period of the affection. I suspect, however, that clonic blepharospasm, really a chorea or habit spasm of the eyelids and adjoining muscles, may be started by disease of the conjunctiva. I have seen it relatively often in connection with chronic follicular conjunctivitis, and have often found it disappearing gradually after treating the lids. But I have always advised other measures as well, and besides, neither the cure of the conjunctival lesion nor the cessation of the twitching could be obtained with sufficient promptness to permit any absolutely positive conclusion. Jacobi's statement regarding the relation of facial chorea to nasal and pharyngeal disease I am also inclined to admit as plausible, but can not consider it definitely proved either by his nor by my own confirmatory observations.

Finally, I wish to dispose of the often reiterated claim that neurasthenia in a given case was cured by spectacles or some operation, be it on the eye muscles or the perineum or uterus, and that it was hence of "reflex" origin. There can be no doubt that a neurasthenic patient may be made comfortable by removing any peripheral source of annoyance, but that is not a cure of his neurasthenia. The intrinsic weakness of the nervous system, which we consider the basis of neurasthenia, is not removed in such a case. One of its manifestations is merely suppressed, perhaps the only one at the time, and the patient is satisfied. But the nervous system is still in the same condition as it was before, ready again to break down, so to speak, under a condition which the normal subject tolerates, although the chance for an ultimate recovery, if that be possible at all, is, of course, improved by eliminating all curable pains. It will be my effort throughout the further part of this paper to show that peripheral lesions are not the cause of neurasthenia, but lead to "reflex" neuroses only in those who are in a certain sense neurasthenic for other reasons.

For the study of the various factors which contribute to the occurrence of neuroses of peripheral origin, patients with optic anomalies furnish the best material since the degree of the peripheral "cause" can be stated numerically and since spectacles furnish such a convenient method of promptly or, if desired, temporarily eliminating the peripheral starting point.

The case-book of every oculist can supply the records of the most variable amount and extent of neuroses of the most variable duration due to eye strain and promptly stopped by proper glasses. But, on the other hand, school and military statistics show how very prevalent are the same refractive errors, without causing nervous symptoms. Indeed, every individual, except a myope, will undergo eye strain when he attempts to use his eyes at short range after age has curtailed his power of accommodation. Sooner or latter astigmatism, hyperopia and presbyopia cause eye strain in every individual afflicted, manifesting itself by blurring, inability to read or work and a feeling of painful fatigue in the eyes on persisting in their use. There is thus a minimum or "normal" amount of asthenopia inseparably connected with every degree of optic error. But on the other hand, among the patients who call on us many present an exaggerated amount of asthenopic discom-

fort out of proportion to the causative strain of the ciliary muscle. Observation also shows that a certain degree of hyperopia or astigmatism—.75 or even up to 1.5 D. variable with age—may exist without causing any annoyance whatsoever to vigorous subjects, while many of our patients complain bitterly in consequence of optic errors of even less degree. But of the cases of "normal" eye strain oculists see but a very small proportion; these people mostly go to the spectacle dealer and buy glasses which give them satisfaction. Hence, it seems as if some ophthalmic writers, especially those of the Philadelphia school, were familiar with only those manifestations which may be termed exaggerated asthenopia.

To an unbiased observer, it must be apparent that if one set of subjects tolerate minor optic defects without distress, or complain only of discomfort in the eye from higher degree of ametropia, while another set of patients get distressing nervous symptoms from the same peripheral disturbances, there must be other factors besides the eye strain involved in the latter case. On comparing these two classes of people as regards their general health and physical condition, it is apparent that the former represent on the whole the healthy type, while the latter are sufferers in more ways than one. The neurologist would recognize among them a large proportion of neurasthenics, or at least subjects predisposed to neurotic troubles. By closer analysis it can be learned that but very few of those who suffer to an unproportionate extent from an existing optic anomaly have not been subject to influences which reduce the stability of the nervous system.

Prominent among the pernicious influences is heredity. Whenever I had opportunity to enter into the family history I have found the neuropathic taint existing in a fair proportion of instances. This I have also found true very often in neuroses of nasal origin. It is not, however, the history of the more serious nervous diseases which we obtain, but rather the evidence of "nervousness" in its less grave manifestations. Paternal alcoholism has not appeared to any noticeable extent in my private records.

With or without the hereditary influences additional factors can be elicited in most cases. One—which has not received the attention it deserves—is the malnutrition of bottle-fed babes. Repeatedly, when a single child from an otherwise healthy family was brought to me on account of exaggerated eye strain, I learned that it had not been properly nourished during its first year. It seems that malnutrition during babyhood may sometimes leave a permanent influence on the nervous system.

During school time, as well as later in business work, want of out-door exercise plays an important rôle in predisposing to neuroses. It is striking how few are the instances, at least after school age, in which neuroses of ocular origin occur in persons of active out-door habits or those engaged in manual labor, and equally striking how often the subjects of neuroses admit close confinement, although exceptions do occur. On the strength of very extensive observation, I must insist that the breaking down of the nervous system is much less due to the amount of eye work done, than to the want of out-door employment of the muscles. It has for years been my habit to insist on proper hygiene in this respect, and many a time have I been rewarded by the recovery of the patient, i. e., his ability—after a time—to continue his eye work without glasses and without suffering.

The liability to neuroses of peripheral origin is augmented by all influences depressing the nervous system. In many histories the coincidence of pregnancy, disturbed sleep, mental anxiety and grief, with the occurrence of nervous disturbances of peripheral origin is quite apparent. Likewise convalescence, for instance from typhoid fever, influenza or in children from measles, is not a rare factor.

An important and frequent condition in neuroses of peripheral origin is anemia. It is probably partly through the production of anemia that some of the pernicious influences just detailed act as etiologic factors. The rôle played by anemia, which its frequent coexistence suggests, can often be demonstrated tangibly by the cure of the neuroses under the use of iron or the employment of hygienic measures which remove the anemia. In suitable cases the most satisfactory proof can thus be furnished that the peripheral stimulus leads to nervous disturbances only when the nervous system has not its normal nutrition.

Toxic influences, which we can not as yet define, are probably, too, of considerable importance. The most distressing instances of exaggerated asthenopia are sometimes observed in subjects with deranged digestion. In some of them correcting glasses do really remove all manifestations of eye strain and headaches dependent thereon. But often optic correction gives but partial relief, and full comfort can only be obtained after the successful management of the stomach and intestinal disturbances. Much can be learned when cases of this type can be observed from the start. I have observed in such instances, of which I have accumulated at least twenty-five records, if not more, that asthenopic complaints, either localized in the eyes alone, or exaggerated in the form of headache, may begin suddenly during a period of intestinal derangement manifested by furred tongue—disturbed appetite and more or less constipation. Most of these patients had neither felt any eye strain nor suffered from headache previously. The dependence of the—apparently—ocular neurosis on the intestinal disturbance was definitely proved in a number of cases by total recovery after dietetic and medicinal treatment directed against the digestive trouble. As the discomfort in the eyes and head was evidently aggravated by eye-use, rest of the eyes was also ordered. The important lesson learned was that while the subjective experience of these patients suggested an ocular origin of the neurosis no optic error worth correcting could be found in many of these instances of asthenopia of acute onset. What becomes of these neuroses if they are not properly stopped by the recognition and treatment of their intestinal origin? From many observations on other patients seen during later periods I conclude that this asthenopia will generally continue as long as the stomach derangement lasts, and that occasionally it will remain even after the digestive disturbance has gradually disappeared spontaneously. Undoubtedly this persistence is due partly to psychic causes and, indeed, yields at times only to psychic or suggestive influences, if at all. I have no doubt that many of the alleged successes attributed to weak glasses —0.5 D. and less—occur in cases of this kind. Observation continued during a number of years has only confirmed my often expressed doubts regarding the direct utility of glasses of such low degree that their selection is a matter of uncertainty on account of their scarcely appreciable optic action.

A psychic factor in the production of ocular neuroses is sometimes observed, too, in another variety of cases. Some patients with medium or low degrees of optic error, formerly tolerated without discomfort, date their as-

thenopia to the time of a conjunctivitis which may or may not be still present at the time of examination. After this is cured the asthenopia still persists and does not entirely yield to appropriate glasses, if such are needed at all. Here, too, an unfortunate rôle is played by the expectant attention which has occupied itself with and intensified the discomfort experienced while the eyes were really sensitive. These cases are also rebellious and yield only to psychic influences. We must recognize that neuroses due to a temporary physical cause may persist after the cessation of the latter on account of psychic reasons. We are treading here on the borderland between the domain of "reflex" neuroses and pure hysteria —usually monosymptomatic hysteria. But, on the other hand, the pure neuroses of peripheral origin, those which are promptly stopped by the elimination of the peripheral influence, have nothing to do with hysteria, even if they should occur in a patient who happens to be hysterical.

It is well to admit that in some instances of neuroses of peripheral origin apparently no deviation from perfect health, except the peripheral anomaly, can be found. It is more logical, however, to concede that we are unable to completely analyze such an apparent exception than to conclude that a peripheral influence which does not affect the nervous system in normal subjects should do so in a given case if it were not for the concurrence of other factors which escape our analysis. Besides, it is an open question whether hypermetropia and astigmatism of more than a minimal degree are not by themselves stigmata of at least imperfect development, if not of degeneration, inasmuch as these optic anomalies have not been observed in the examination of uncivilized races.

What has been said regarding the etiology of neuroses of ocular origin applies more or less to all "reflex" neuroses. In the case of nasal neuroses I wish to emphasize, perhaps even more, the importance of intestinal disturbances. Quite commonly these patients have constipation with flatulency. It can often be learned from self-observing patients that their nasal neurosis, for instance, asthma, is intensified whenever their intestinal disturbance becomes more manifest, and that on the contrary attention to diet and to the state of the bowels relieves their nasal symptoms or any nervous disturbances produced thereby.

In the case of some of the neuroses of nasal origin we must also take into account another factor, which, by itself, may undermine health, viz.: the existence of suppuration. Some of these patients evidently suffer from systemic injury due to the pyogenic infection apart from the "reflex" influence on the nervous system. Indeed, the history sometimes suggests that the nasal irritation caused nervous symptoms only after long-continued nasal suppuration helped to create a predisposition.

The degree of intensity of the peripheral disturbance provoking the neurosis varies considerably in different patients. I need but repeat that many healthy young people can tolerate a hyperopia of perhaps 2 D. or an astigmatism of 1.5 D., without any discomfort, while most distressing nervous symptoms are sometimes relieved by glasses of the strength of .75 D. The readiness with which the nervous system reacts by morbid symptoms to such a peripheral anomaly is an index of its instability. There are all possible degrees of "nervousness" without a sharp line dividing this condition from perfect health.

It is self-evident that in a given case the occurrence of a neurosis may depend on any intensification of the peripheral cause as well as any change in the condition of the nervous system. An optic anomaly which had hitherto produced only "normal" and local asthenopia may cause diffuse nervous symptoms when the patient taxes his eyes by continued close work. Similarly a nasal condition, which up to a given time had not led to any neurosis, may result in nervous disturbances when aggravated by an acute inflammatory condition or intensified by unfavorable climatic influences.

Due attention to the general health and general medical history of patients with neuroses of peripheral origin as well as the study of variations in the peripheral condition gives us the clue to the fluctuations of their symptoms. It is only by treating them from the standpoint of the physician and not merely through the instrumentarium of the specialist that we can fulfill our full duty toward these sufferers.

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HAIR AND ITS ANOMALIES.*

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The poets and sculptors of Ancient Greece have left in verse and marble their admiration of long hair. The Hebrews also looked upon hair as a great ornament, and their women gloried in their luxuriant tresses, bedecked with gold and precious stones (Isaiah iii). The men usually kept their hair short, but there were notable exceptions, as with Absalom and Sampson. With the latter it was accompanied with superhuman strength, and when Delilah, during his sleep, cut off his flowing locks, his strength was gone: "Howbeit the hair of his head begun to grow again, after he was shaven." "But the Philistines took him and put out his eyes and brought him down to Gaza, and bound him with fetters of brass, and he did grind in the prison house'" (Judges xvi). When his hair had grown again his enemies sent for him that "he may make us sport." "And Samson took hold of the two middle pillars upon which the house stood, and on which it was borne up, of the one with his right hand, and of the other with his left." "And Samson said, 'Let me die with the Philistines.' And he bowed himself with all his might, and the house fell upon the lords, and upon all the people that were therein. So the dead which he slew at his death were more than they which he slew in his life." Thus Samson added greatly to the death-rate of the Philistines, but he was crushed to death himself.

The Hebrews of the Old Testament particularly deprecated the loss of long hair, but on one occasion, their mocking of a prophet resulted in their being eaten up by she-bears, when they cried out to Elisha, "Go up thou bald head." Fortunately, as civilization has advanced, bears have been almost exterminated.

The priests of ancient times wore long hair, until Pope Anicetus (A. D. 155) compelled them to wear it short. Long and flowing hair was so universally esteemed that the tonsure was regarded as an act of mortification. They declaimed against the long hair of the laity most bitterly. Anselm, Archbishop of Canterbury, pronounced a sentence of excommunication against all who wore long hair. Serlo, a Norman bishop, acquired great honor by a sermon which he preached before Henry I (A. D. 1104) against wearing long and curled hair, by which the king and all his courtiers were so deeply affected that they consented to resign

*Read before the Society of Microscopists of the District of Columbia, Jan. 9, 1900.

their flowing ringlets, of which they had been so vain. The prudent prelate gave them no time to change their minds, but immediately pulled a pair of shears out of his sleeve, and performed the ablation with his own hands. (Encyclopedia Britannica.)

Chemically, according to Mulder and Donders, hair is composed of: carbon, 50.65; hydrogen, 6.36; nitrogen, 17.14; oxygen, 20.85; sulphur, 5. The same products are found in the nails and epidermis, and in the hoof of a horse, the horn of a cow, and in whalebone and tortoise shell. They differ slightly in the quantity of organic matter they contain, but the difference does not vary much beyond 1 per cent. Hair yields from 54 to 1.85 per cent. of ash, containing among other ingredients peroxid of iron and a little silica. Professor Frey of Zurich speaks of hair as being the highest variety of epidermoidal tissue: "An extreme complication of structure welcomes us here all at once."

With the exception of the palms of the hands and the soles of the feet, hair is found on every part of the surface of the body. Being appendages of the skin, a description of hair necessitates a study of all the tissues therein contained.

The hair follicle, according to Tilbury Fox, may be regarded as a depression of the skin, the papilla at its blind end representing one of the ordinary papillæ of the skin; as Frey expresses it, an involution of the corium, and frequently of the subcutaneous cellular tissue. This involution shows externally, longitudinally, then transversely arranged connective tissue, and internally, a hyaline boundary layer. At the bottom it puts forward as a vascular papilla. It is the formative and nutritive organ of the whole. Hair, being modifications of the epidermis, receives the same vascular and nervous supply, and owes its glossy appearance to the sebaceous glands which open near its free extremity.

Dr. L. Duncan Bulkley[1] says: "At the deepest portion of the hair follicle, or cavity in which the hair rests, there is a certain anatomical structure which is of the greatest importance in reference to the growth and vitality of the hair, namely, the *hair papilla.* This is, of course, quite distinct from the papilla which we have seen to cover the surface of the corium of true skin; it is situated deep in the tissues, at the bottom of each hair follicle, and projects into a small cavity at the lower end of the hair. This little hair papilla, which is only 1-15 of a line, or one hundred and eightieth of an inch long, is of vital importance to the growth of the hair, there being a minute blood-vessel in its interior, and it is believed that the reproduction of the hair, after it is lost from any reason, takes place from this papilla. Conversely, is it also true that as long as this papilla is intact, and in a healthy state, the hair will be reproduced, even though extracted artificially. Thus, 'plucking the hair out by the root' does not destroy the life of the follicle; only the hair is removed, the papilla from which it regrows remains."

As a rule, only the hair of the scalp, and certain other parts of the body, is coarse and long. The soft downy hairs called lunago, on the cheeks of an attractive girl of 16 years have been likened to the down of a peach.

It appears to be the main object in life for men to hold on to the hair they have, but occasionally we come across men and women who possess more wealth of hair than is desirable. This condition is known as hirsuties or hypertrichosis. My first knowledge of this condition dates back to my childhood days, when at a New England boarding-school I committed to memory, by compulsion, the book of Genesis, where you will find in chapter xxv the report of the twin delivery of Esau and Jacob: "And the first came out red, all over like a hairy garment; and they called his name Esau." Then came a time when the hairy man became a great hunter, and like those of modern days suffered from starvation, and he sold his birthright to his twin brother for a mess of red pottage. Finally, the sightless old Isaac exclaimed: "The voice is Jacob's voice, but the hands are the hands of Esau."

I will never forget the bearded woman who was on exhibition many years ago. She was of sufficient height to have belonged to the famous giant regiment of Frederick the Great. Her beard was magnificent, and showed to great advantage on her snow-white, depilated bosom. Like the ballroom belle, she thought that "beauty unadorned, was adored the most." Years after I had gazed on this freak of Nature, I met in Brunswick, Germany, Mr. Greenwood, who was the American Consul there. In former years he was business manager of P. T. Barnum. Consul Greenwood told me that the bearded woman caused great excitement, and grave doubts as to the sex of this individual existed. Finally, Dr. Valentine Mott and other eminent surgeons made a physical examination, and they declared that she really belonged to the gentler sex. This was fully and satisfactorily proven, as, shortly after, she gave birth to a son, who, like Esau, was "all over like a hairy garment."

Dr. M. Bourneville[2] states that he was recently consulted by a young girl for an ordinary affection, and that on seeing her he was struck with the following singular anomaly; the eyebrow and the eyelashes of the right eye were thick and black, while the inner half of the left eyebrow, and that of the eyelashes, were entirely blond. The outer half of the left eyebrow was black, although up to the age of 6 years the entire eyebrow had been blond. The left eye and the palpebral opening were somewhat smaller than the corresponding organs of the right side. The hair was black over the entire front part of the head, but on the right side of the occipital region it was black, sprinkled with a few blond locks, and on the left side it was half black and half blond. The patient assured the author that the hair on the rest of her body was black.

Malcolm Morris, F.R.C.S., in speaking of hair turning suddenly grey through extreme terror, says the evidence on which these cases are reported is not always satisfactory, and refers to Dr. Austin Flint, a distinguished American physiologist and physician, and quotes the following statement of Dr. Flint: "In examining the literature of this subject, it is difficult to find in the older works well-authenticated cases of these sudden changes, and most of those that are quoted are taken upon the loose authority of persons evidently not in the habit of making scientific observations. It is not necessary, therefore, to quote the instances of sudden blanching of the hair recounted by the ancient writers, nor those well-known cases of later date so often detailed in scientific works, such as that of Marie Antoinette or Sir Thomas More; and it seems proper to exclude also cases in which blanching of the hair has been observed only by friends or relatives, for in most of them the statements with regard to time are conflicting and unsatisfactory."

An important case was reported in a medical journal by Dr. Landois in 1866. In this case the blanching occurred in a single night, while the patient was under the daily observation of the physician. When examined microscopically, the white hairs were found to contain

air globules, but there was no loss of pigment. It was in consequence of the presence of the air globules that the hairs appeared white.

Dr. Parry[3] gives the following instance of hair turning white from fright. On Feb. 19, 1859, the command of General Franks, operating in the southern part of the kingdom of Oude, had an engagement with a body of rebels. Several of the enemy were taken prisoners. One of them, a Sepoy, was led before the authorities to be questioned. "I then had occasion," said Parry, "to observe in this man the events that I propose to relate. The prisoner, deprived of his uniform and entirely nude, saw himself surrounded by soldiers. He then began to tremble violently, terror and despair were depicted on his face, and, though he responded to the questions addressed to him, he seemed actually stupefied by fear. Then under our very eyes and in the space of scarcely half an hour, his hair, which we had seen was a brillant black, turned grey uniformly over the whole head."

Dr. P. H. Pye-Smith, of Guy's Hospital, writes of canities as follows: "General blanching of the hair is a well known senile change. But, like baldness, it often occurs in early adult life, especially when the hair is very dark. Besides losing its natural pigment, and so acquiring a dull, yellowish, "milk-white" appearance, the hair is apt to become dry and admit air-bubbles, which increase its refractive power and produce the glistening steel-gray or "silvery" aspect. . . . Bichat and Alibert record cases which they actually saw, and Brown-Séquard has seen rapid blanching in his own beard (*Archiv de Phys.*, 1869, page 442). A gray patch sometimes follows neuralgia."

Dr. Laycock evidently witnessed the instance of the Sepoy just referred to, who was seen to turn gray in half an hour, and reported it in the *Med. Times and Gaz.*, in 1862. A young man once consulted Dr. Pye-Smith for some slight ailment, who had perfectly white hair. "In answer to inquiry he stated that a few years before he had fallen asleep after a debauch, and on waking in a cold room in the morning found that his hair had turned white. The objection that his beard was brown was answered by the explanation that when the change of color occurred it had not yet grown. This sudden change is probably due to development of air-bubbles in the shaft of the hair."

Dr. Schmitt[4] of Frankfort, reports a case of sudden turning of the hair to gray. The patient was a laborer, 36 years of age, who at the time was suffering from some affection of the neck. His hair showed two white patches, one in the middle line of the head, the other over the right ear. Eight years previously he had had a severe mental shock while on a railroad journey, and it was noted by his friends and relatives that these patches appeared almost immediately after. The possibility of its having been a congenital or gradually acquired defect covered by hair dye, as has frequently been shown, seemed remote.

Before the Academy of Medicine, in Ireland, on March 24, 1883, Dr. Banks[5] referred to a case which had come under his notice, that of a young woman. Half of the lashes of one of her eyes became snow white, which she attributed to the annoyance suffered from the persistent gaze of a "wall-eyed" admirer who had white lashes on the defective eye.

Several years ago I reported, in a German newspaper of this city, a case of a man where the hair of his scalp and beard turned white during a single night. I obtained the data from a report of a case by Dr. Landois von Griefswald. As to the shock which caused it, I could get no information.

The following undoubted case occurred in the clinical service of Professor Mosler of Berlin: A man, aged 34 years, was brought in, profoundly drunk. The next morning the doctors and patients noticed that the hair of his head and beard had turned gray. When he looked at himself in the looking-glass he exclaimed, *Ach Gott, wir sind die Haare grau geworden.* A microscopic examination was made in this case. The white hairs were filled with air-bubbles. There was no loss of pigment.

The hair has turned from white to black after exposure to severe cold. "On the 5th of January, 1895, we had a tremendous fire in Louisville," writes Dr. George W. Griffiths;[7] "the night was very cold and the streets were covered with ice and snow. The gentleman I shall present as the subject of these remarks is an engineer in the Louisville Fire Department, aged 65 years, who was on duty from 11 o'clock on the night of the 5th of January until 2 o'clock of the following day, except when he was taken away overcome by sheer exhaustion, and sent by my friend, Dr. Marshall, in a carriage to his home, where he remained two or three hours, and again returned to duty. Two or three sections of hose were leaking near his engine, and the spray was blown by a strong north wind until he was covered from head to foot with ice, which became so thick that it had to be cut or broken off from his clothing. This man was constantly at his engine, exposed to the north wind, which was carrying the spray of water from the broken hose. The top of his head was the warmest part of the body; his eyebrows and whiskers became wet and were frozen stiff. He had a red skull-cap over his head, and his helmet on top of that; his head was not exposed at all, nor any of his hair, except the eyebrows and whiskers.

"I saw him the next day, when he had a very feeble pulse, and was much exhausted and worn out. He had not been in robust health for some time. The next afternoon after the exposure to the severe cold, as I have indicated, his hair turned black; and the wonder becomes greater when we consider that his hair was perfectly white; before that he was blonde. Now his hair is black. I have known this gentleman for over forty years. The hair is oily and does not seem to be dead at all. His head has been very carefully scrubbed several times, as I was inclined at first to think that the change in color was caused by cinders or other foreign matter; but such did not prove to be the case."

The French supplement to *Le Grece Medicale* contains a curious account by Dr. Roveas of Amorgos, of a relative of his who died recently, aged 90 years. He had never been ill in his life, but the hair of his head and face had become prematurely white. Six months before his death, however, his beard and mustache suddenly became dark, the color continually deepening, "to the curiosity and stupefaction of all." Dr. Foristanos, the editor, adds a story of an old priest, whose white hair fell off, as the result of erysipelas, and was replaced by a thick growth of raven locks. Perhaps some cases of this kind may have given rise to the ancient Greek myths of rejuvenescence, as when

> Medea's spell dispersed
> The weight of years
> And Orson stood a youth
> 'Mid youthful peers.

—*Medical Magazine.*

Alopecia is derived from the Greek word ἀλώπηξ, a fox—not because the loss of hair gives a man a foxy appearance, but the ancient Greeks thought that the

bushy-tailed little animal was liable to baldness. A French medical paper prints what is believed to be the oldest medical recipe. It is a tonic for the hair, and its date is 4000 B. C. It was prepared for an Egyptian queen, and required dogs' paws and asses' hoofs to be boiled with dates in oil.

Theory after theory continues to be advanced for the cause of baldness. It was stated in an editorial article in the *British Medical Journal*, several years ago, that the "new man" finds it almost as difficult to keep his hair as the "new woman" does to find a husband. The theory of the bald-headed man generally is that his exceptionally active brain has used up the blood-supply which should have nourished his scalp; but those whose crop of hair still stands untouched by the scythe of Time unkindly hint that this explanation is of a piece with Falstaff's excuse that he had lost his voice by "singing of anthems." An American author has assigned indigestion as a cause. "Nature, we are assured, is very careful to guard and protect and supply the vital organs with the proper amount of nutriment, and when Dame Nature can not do it, she naturally cuts off the supply of parts least vital, like the hair and nails. I have observed that as a rule it is the best nourished man who is the baldest. I think that it was the virgin Queen Elizabeth who said that she did not look upon a man as being old until he was 'fat and bald.' Men of the build of John Sherman, who lives still, honored and beloved by his countrymen, and Abraham Lincoln and Gladstone, although thin and spare, had luxuriant hair. Bismarck, on the other hand, was large every way, very well nourished, and he is pictured as having had only three hairs on the crown of his head, and they stood up 'like quills upon the fretful porcupine.'"

In THE JOURNAL[8] there is an article on alopecia, in which the author claims that residual air is the cause of baldness, and explains why women are almost exempt from it.

Music appears to have an effect on the growth of the hair. Brass instruments have a fatal influence, notably the cornet, the French horn and the trombone. They will apparently depilate a player's scalp in less than five years. The baldness which prevails among members of regimental bands has been given the name of "trumpet baldness." It has been suggested that it is barely possible that the baldness which is said to prevail among the habitues of the front rows at the theater may be due to the proximity of the brass instruments, or may be caught by some contagion from the players themselves. Piano playing, on the contrary, seems to prevent or arrest the loss of hair, as is the case with Paderewski and Emil Sauer, and every noted pianist I ever heard of.

The late Prince Albert, consort to Queen Victoria, became bald at an early age, and he held that loss of hair was a sign of high breeding, of noble blood. This brings up the question of heredity.

At the meeting of the American Dermatological Association, held at Montreal, in September, 1895, a paper was read on "A Further Study of Alopecia Præmatura or Præsenilis, and Its Most Frequent Cause—Eczema Seborrhoicum," by George T. Elliott, M.D. "Also a preliminary bacteriological report on Eczema Seborrhoicum. *For the first time* successful production of the disease by inoculation of pure cultures of certain diplococci," by Wm. H. Merrill, M.D. Dr. Elliot gave the etiologic causes found active in the production of alopecia in 344 patients, mostly occurring in private practice. "Only four, or 1.16 per cent. could be attributed directly to heredity." Dr. Merrill found several varieties of bacilli, and made inoculation experiments on fifty patients. Pure cultures were made use of, and he succeeded, in advance of any bacteriologist, in producing lesions characteristic of eczema seborrhoicum.

Dr. L. Brocq[9] says that when bacteriology of the hair is taken up various microbes are found in it. Six are, however, discovered quite constantly. These are: 1, a white fungus; 2, a yellow fungus; 3, a bacillus subtiliformis; 4, a bacillus in the form of a boat, staining with difficulty; 5, a special micrococcus which Saboraud designates provisionally under the name of micrococcus cutis communis; 6, the spore of Malassez, the flask of Unna, which he calls the bacillus asciformis. These two microbes, which appear to be the most important, are found in seborrhoics who are not attacked with alopecia areata.

Dr. R. Saboraud, of the St. Louis Hospital, Paris, by his experiments has given convincing proof that the microbacillus is the constant microbian expression of seborrhoic infection, causing baldness. Saboraud says: "The three organs of defense possessed by the skin are the epidermis, the derma and the migrating white corpuscles. Each of these organs of defense defends itself by the same function for which its differentiated form has prepared it. The epithelial cell defends itself by making horny cells, the fiber cells by making fiber, and white corpuscles by their constant rôle of a unicellular ameboid seizing the enemy, closing in around it and feeding on it. Every microbian lesion must be regarded simply as a battle-field. This conception is the foundation for all pathologic histology, and unless this is thoroughly understood, the whole phenomenon is a mystery, while once grasped everything becomes plain; the exfoliation is merely the epidermis defending itslf; suppuration merely the leucocytes defending themselves; and the induration merely the mechanics of the fibrous defense. Each tissue, each element, is independently defending itself, and we know that any direct irritation of a living cell induces its multiplication, whether the irritation is mechanical or toxic. The process is a blind, unintelligent process, often defeating its own aim, as when a white corpuscle seizes a microbe and carries it away with it, but is conquered by the microbe. The microbian lesion, as we see it, is not a passive scene of destruction by the microbe. It is essentially a cellular reaction on the part of the organism against invasion, a defensive apparatus erected by the organism itself, and this conception of it places dermatology in an entirely different light, and renders a new classification necessary. Our present classification is like a pharmacy in which all the drugs are arranged according to the size of the bottles without regard to their contents."

BIBLIOGRAPHY.

1. Am. Health Primer.
2. Prog. Med.
3. Dublin Med. Jour., 1861.
4. Virchow's Archiv., vol. clvi, No. 1, 1899.
5. Med. Times and Gaz.
6. Washington Jour.
7. Jour. of Cut. and G.-U. Dis., Sept., 1895.
8. Jour. Am. Med. Ass'n, Dec. 23, 1899.
9. Jour. of Cut. and G.-U. Dis., Sept., 1896.
10. Annales de Derm. et de Syphil., Paris.

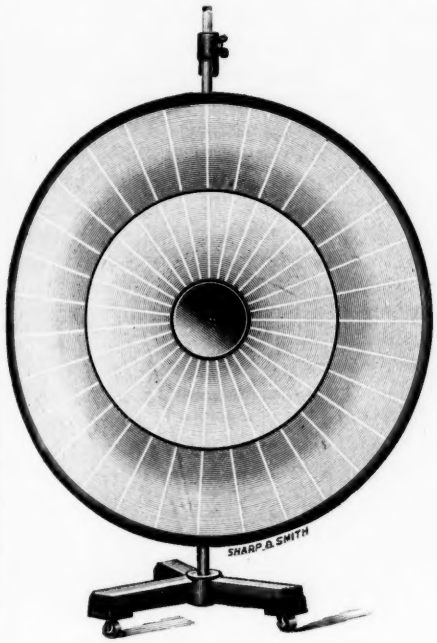
CARCINOMA METASTASIS IN THE SKELETON.—Virchow recently exhibited preparations showing numerous cystic cavities in the bones, particularly numerous in the spine. The bodies of some of the vertebræ had entirely vanished and deposits of lime infiltration were found in the lungs, but never noted to such an extent as in this case. The aspect of the bones resembled that of pernicious anemia.

INSTRUMENT FOR USE IN PHOTOTHERAPY.

BY J. W. KIME, M.D.

FORT DODGE, IOWA.

I have devised and am now using, in the treatment of cases by means of concentrated light, a reflector which is so constructed that the direct rays of the sun falling on it are focussed at a distance of eight feet, on an area six inches in diameter, the reflector being thirty inches in diameter. Thus a light is produced equal in intensity to twenty times that of direct sunlight, and covering an area of twenty-eight square inches. As the actinic rays of the sun are desired rather than the heat rays, blue glass is placed in front of the reflector, which permits of the passage of the light in nearly its full strength, but excludes a large percentage of the heat rays. The reflector is mounted on a metal stand which permits of motion in all directions. The light from this reflector is as powerful as it is possible to make use of on account of the accompanying heat.



THE KIME PHOTOTHERAPY REFLECTOR.

AS USED IN TUBERCULOSIS OF THE LUNGS.

The method of using the instrument is as follows: The part on which the intense light is to be used is made bare and the patient is placed in front of the reflector, and at a distance of eight feet from it; the rays of the sun fall directly on it, it being so placed that the reflected rays will be focussed on the part to be treated. If the heat be too great at the focal point, the patient may be seated either within or beyond the focal point of the reflector.

Concentrated light is useful in the treatment of a number of diseases and especially in those of parasitic origin. It has long been known that strong light, and particularly the direct rays of the sun, was very destructive to bacteria. For this reason light is practically excluded from our bacteriologic laboratories. Finsen, of Denmark, has established a light institute and reports excellent results in the treatment of lupus and other parasitic skin affections. Abrams, of California, reports a number of cures of tuberculosis of the lymph glands as well as of lupus and other skin diseases of parasitic origin. The writer has reported a number of cures of lupus and of tuberculosis of the lymph glands of the neck.

In the treatment of tuberculosis of the lungs in its earlier stages, the light penetrates the chest wall and, I believe, has some germicidal influence on the bacilli in the lung. But the action of the light is not confined to its local effects alone on the parts diseased. The blood, every drop of which passes a number of times through the area bathed in the powerful light during each treatment, is without doubt beneficially influenced by the chemical action of the light upon it. It is still too early to report final results upon cases of tuberculosis of the lungs being treated in this manner, but I have much reason to believe that sunshine thus used will result in permanent good in the treatment of these cases.

In the treatment of chronic joint affections the reflector is used in the same manner, and has, over the apparatus in which high temperatures alone play a part, the additional advantage of the beneficial action of the powerful light.

THE INFLUENCE OF HIGH ALTITUDE ON ALBUMINURIA.*

BY EDWARD C. HILL, M.D.

DENVER, COLO.

The following brief remarks are based on the examination of something over 6000 urines in Denver, at an altitude of one mile above sea-level. No statistics having being kept, the few observations I have to make should be regarded as clinical impressions rather than as strictly scientific data.

In my experience, true renal albuminuria is comparatively rare in Colorado. This desirable state of affairs is probably due for the most part to atmospheric dryness and rarity, both of which favor the eliminative action of the lungs and skin and thus relieve the kidneys in a corresponding degree. It is true that frequent

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winds and sudden weather-changes are a feature of Colorado's climate, so that patients must be warned to dress themselves accordingly, since acute exacerbations are otherwise likely to supervene.

Acute nephritis, though not common here, is exceptionally severe. Amyloid disease is certainly less frequent under predisposing circumstances than most of our text-books would lead us to infer. Chronic parenchymatous nephritis appears to terminate fatally in about the same time as at lower altitudes. The chronic interstitial type of the disease, on the other hand, is influenced favorably by this climate—a fact which I think may be ascribed largely to its tonic, invigorating qualities.

The reports of the bureau of health of this city show 77 deaths from nephritis in a total of 1838 for the year 1897, and 85 deaths from the same cause out of 1928 in 1898. These statistics are very favorable, but they should be considered in the light of the fact that the population of this city averages younger than that of eastern cities.

I invariably examine the urine of infectious cases, and have found albuminuria at some time or other in the majority of instances, but actual nephritis is quite rare, even in diphtheria and following scarlatina. Renal tuberculosis, as might be supposed from the great number of phthisical persons in this state, is comparatively common. It seems to be little influenced by the climate.

As regards other forms of albuminuria, though pregnancy is not infrequently attended by considerable albumin in the urine, serious eclampsia is, I think, less common than at lower levels. Slight, transient, circulatory albuminuria, due chiefly to high blood-pressure, is frequent here, particularly in the ubiquitous bicycle rider. Hemic forms of albuminuria are benefited by the hematosic action of Colorado air and sunlight. Of heterotoxic forms of albuminuria, that due to metallic poisons is seen rather frequently in our smelters and miners. The albuminuria of pyelitis appears to be of more common occurrence here than at sea-level, which may be ascribed, perhaps, to the greater density of urine, favoring precipitation of uratic and phosphatic sediment and the formation of calculi. The false albuminuria of cystitis and urethritis is doubtless fully as frequent in Colorado as elsewhere.

VESICORECTAL ANASTOMOSIS.

WITH SPECIAL REFERENCE TO THE TREATMENT OF EXSTROPHY OF THE BLADDER.

BY JACOB FRANK, M.D.

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CHICAGO.

The methods of treatment of ectopia vesicæ have not been very variable and are confined as a whole to two procedures, viz.: the plastic and the various methods of diverting the course of the urine.

Plastic Methods.—The plastic operations which have been performed, and which have for their object the covering of the exposed mucous surface with skin, aim at remedying only the cosmetic effect, which is but a minor evil. In this category belong those of Holmes, Wood, Le Fort, Thiersch, Hirschberg, Kocher, Hagenbeck, Auger, Greig Smith and many others who added much to this method by their own personal technic. All these methods, although they have done much toward the plastic repair, have many objections. They do not provide a sphincter, and although by covering the exposed mucous membrane they preserve it from external irritation, they do not prevent the escape of urine. The inverted skin flap with its growth of hair favored incrustations of calcareous salts and so irritated the mucous surface worse than before.

Sonnenburg advocated the entire extirpation of the exstrophied bladder, and the implantation of the ureters at the base of the penis, possessing the advantage that the escaping urine could be more effectually caught in a urinal intended for that purpose. Trendelenburg sutured the edges of the bladder after forcibly narrowing the pelvic girdle, thus resuming the operation conceived by Dubois and Dupuytren in France, a plan which has found little favor, as it is open to the same objections as the other methods above described.

The experiments of Tizzoni and Poggi, while they are ingenious, are of little practical purpose. They first isolated a loop of intestine, after the method of Thiry, and at a subsequent operation they ablated the entire bladder, then sutured the ureters into the artificial intestinal loop, and finally sutured this loop to the neck of the bladder. Recently Rutkowski imitated this procedure in a case of exstrophy of the bladder, but his operation is only a novelty in the history of surgery. In his technic he made an abdominal section above the level of the exstrophied bladder, drew out a loop of intestine and resected six centimeters of it. This he left attached to the mesenteric pedicle to receive its vascular supply. The severed ends were closed by circular enterorrhaphy, the excluded segment was split opposite to its mesenteric attachment and the mucous membrane stretched out and sutured to the margins of the bladder after being freshened. The abdominal walls were next approximated so as to cover the bladder. The patient recovered and eight weeks after the operation was able to retain over an ounce of urine for three-quarters of an hour.

Methods of Diverting the Course of the Urine.—The idea of implanting the ureters into the intestines is not new. Simon, in 1851, attempted it on a human subject, and the failure of such an early effort is not surprising when we consider the imperfection of the technic and the absence of antisepsis. The fruitless attempts of Simon, Lloyd and Roux found few imitators, and the question was held in abeyance for many years until aseptic methods gave a new impetus to operative surgery. The union of the ureters with the intestine is not an unusual condition. It is well known that in birds urine and fecal matter is emptied into the cloaca during the entire life. Embryology teaches us that the secretions from the kidneys in the human fetus empty into the cloaca during the first months of gestation. This continues until the time when, in the developmental progress, the bladder is entirely separated from the rectum.

Simon's effort consisted in passing a loop of thread through the walls of both the ureter and the rectum, and tying them tightly together. Necrosis occurred at the point of ligation, and a communication resulted. The patient died of pyelonephritis. Thomas Smith derived no better results from his case. Since then the idea has been renewed and the answer especially sought from the experimental as well as the clinical standpoint, until to-day the suggestions and methods have multiplied to an almost embarrassing extent.

The first in the experimental field were Glück and Zoller, who tried, on dogs, the effect of total extirpation of the bladder with subsequent deflection of the ureters, sometimes to the skin, sometimes into the rectum. The

latter was in all cases unsuccessful. About the same time Bardenheuer tried unilateral implantation into the intestine. His animals recovered from the operation, but subsequently died from hydronephrosis due to stricturing of the ureter.

Novaro reported, to the Italian Surgical Society of Genoa, in 1887, that he had successfully anastomosed both ureters with the intestine, and demonstrated that the intestinal mucous membrane is well able to accommodate itself to the presence of urine—a point already established by Richardson, who cites the case of a patient living seventeen years with a congenital implantation of both ureters within the intestine. Paoli and Busachi reported a number of similar experiments, and in nearly every case a constriction of the ureter developed.

Giordano, VanHook, Tuffier, R. Harvey Reed, Morestin, Chaput, and, recently, Kalabin tried similar experiments on dogs, but their results are no better than those of their predecessors. For the relief of exstrophy, Sonnenburg and Harrison, discouraged by the difficulty of ureteral implantation, tried to divert the urine through a cutaneous fistula, an operation performed before by Glück and Zoller. Among others who have experimented in the same direction may be mentioned Le Dentu, Pozzi, Dastre and Treckacki.

In this hasty review the efforts of Pawlick and Boari to divert the urine through the vagina should be recorded. Küster, in 1891, for cancer of the prostate, implanted both ureters in the rectum, but the patient died on the fourth day, of peritonitis and evidences of renal infection. Chaput, in 1892, performed unilateral implantation for the relief of a uretero-vaginal fistula, with success; in another patient, for tuberculosis of the bladder, he implanted both ureters, but at different times, the patient dying from anuria, after the second operation.

The results of these experiments and isolated clinical attempts are almost uniformly unsuccessful. The technical difficulties have been fairly well overcome, but the dangers of septic peritonitis, secondary pyelonephritis from ascending intestinal infection through the ureters, hydronephrosis from stricturing of the ureter, were still unfavorable and unavoidable complications. In order to overcome these Tuffier and Maydl, each claiming priority, proposed and carried out the implantation of the vesicle trigone, thus avoiding the possibility of stricturing and ascending infection. In fact, it is the preserving of the ureteral sphincter that protects the ureter itself and the kidney against infection. As long as the ureter is permeable and its sphincter functionating, so long is the kidney protected.

Boari and Chalot, subsequent to Tuffier's and Maydl's work, each devised a special button for anastomosing the ureters to the intestine, with only moderate success. Others who have contributed by their efforts, since the advantages obtained by transplanting the vesical trigone, are Fowler, Pisani, Martin, Vignoni and Roux. My own work in this direction was commenced in the spring of 1898, when a series of experiments was conducted on both unilateral and bilateral implantation of the ureters in the intestine after a method of my own, with no better success than those preceding me. I then turned my attention to anastomosing the bladder to the rectum, an idea which I thought was original at the time, but in the discussion of the paper before the Chicago Medical Society my attention was called to an operation performed by Timothy Holmes, mentioned in his "Surgical Diseases of Infancy and Childhood." He attempted to establish a vesicorectal fistula by means of a screw-blade and forceps, and describes his operation as follows:

> In the case of a boy in whom I had planted a bridge of skin in front of the exposed mucous membrane, who found much difficulty in procuring a proper urinal, I endeavored to divert the urine into the rectum by the following plan, which, or a modification of which, I proposed to follow in the next case that came under my care. I placed the blades of a kind of screw forceps (much resembling Dupuytren's entérotome) in the rectum and bladder, and by bringing them gradually into the closest possible contact I destroyed the tissues between them, thus establishing a free communication through the subperitoneal tissue between the bladder and rectum. The attempt failed; for though the urine passed in considerable quantities into the bowel, a good part of it still continued to escape above the pubes. I endeavored to obviate this by closing the suprapubic opening altogether by plastic operation. The opening was thus, in fact, reduced to a sinus, but this caused such intolerable pain when the bladder was distended, and such accumulation of sabulous matter in it, that I was fain to abandon the attempt, break open the suprapubic hiatus again, and allow the rectal communication to close. The original fault of the proceeding lay, I think, in my having covered over the opening of the ureters before I applied the screw forceps Had I been able to comprise these openings in the tissue which I destroyed, so that the ureters would have opened directly into the cloaca between the bladder and rectum, I believe the attempt might have succeeded. In my case, though it was a failure in other respects, the communication between the bladder and rectum was established without producing any unpleasant symptoms, and the communication was well above the sphincter, so that the urine was retained in the bowel, and passed naturally along with the motions.

The operation and technic, which is original, now remains for consideration, and consists of anastomosing the bladder to the rectum with my decalcified bone coupler, which has already been described.[1] The technic is as follows: in a male dog, the incision is made in the groin, and in a bitch, in the median line. Generally the bladder is found distended, and is emptied by squeezing it gently with the hand, when the urine escapes through the natural channel. The rectum is next picked up and freed of its contents, as in any intestinal operation. The bladder and the rectum are then brought forward and placed in position for anastomosis. (Fig. 1.) Two or three interrupted Lembert sutures are now taken about half an inch below the lower ends of the incisions determined on in the bladder and rectum, care being exercised in selecting them that the coupler, when it is inserted, will not encroach on the ureteral openings in the bladder. A longitudinal incision is then made in the bladder, large enough for the coupler selected, and a puckering string, applied over and over the cut margin. (Fig. 2.) The rectum is next opened in its long axis and a puckering string similarly applied. The suture should be taken so that the free ends lie uppermost, thus facilitating easy tying. The operator now slips the coupler (Fig. 3) into the bladder opening, at the same time gently spreading the collars apart, while an assistant makes one knot and draws down on the puckering string until the rubber tubing is felt; another knot is made and the ligature cut off short. The other half of the coupler (Fig. 4) is then slipped into the rectal opening and likewise tied and cut off. Several interrupted Lembert sutures are taken around the borders, to make the work more secure. The operation is very simple and can be accomplished in ten or fifteen minutes.

In the first six experiments, a five-eighths-inch coupler was used, but later, in large dogs, a seven-eighths-inch,

[1] Medical Record, N. Y., Oct. 3, 1896; THE JOURNAL, June 19, 1899; Medicine, January, 1897.

and in smaller dogs a three-quarter-inch coupler was inserted. The small piece of rubber tubing never failed to pass away. Silk was used in all experiments.

The opportunity of trying this new method on the human being has not been afforded me, although it was tried on the cadaver and the technic carried out nicely. Of the fifteen dogs operated on, nine recovered and six died. In the first two experiments the technic was not yet perfected and much unnecessary work was done, which undoubtedly contributed largely to the failures. As a rule, the dogs were quite sick for the first few days, and showed signs of pain, with rise of temperature. For a week after the operation urine and feces were voided oftener than after this period. The dogs would hoist their legs as though in the act of urinating, without accomplishing anything, and finally squat down and urinate from the rectum. The animals that were kept, accustomed themselves to their condition and urinated periodically. The feces were always passed in a liquid form, being softened by the urine. This latter appears to confirm the observation of Novaro, that the rectal mucous membrane readily adapts itself to the conditions of a urinary receptacle. In the following experiments the bacteriologic and pathologic examinations and microphotographs were made for me by Dr. Maximilian Herzog, professor of pathology in the Chicago Polyclinic.

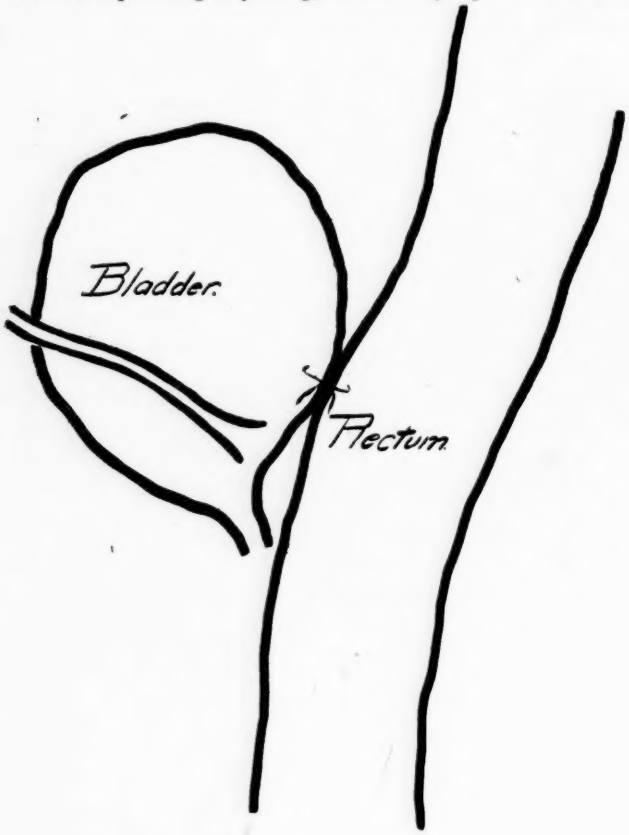

FIG. 1.

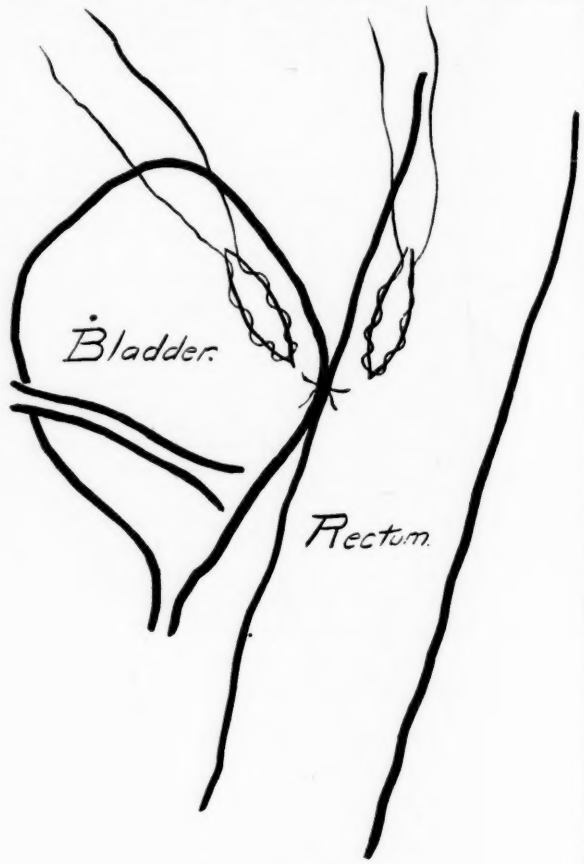

FIG. 2.

EXPERIMENTS.

EXPERIMENT 1.—A male dog, weight 25 pounds, was operated on April 18, 1899, and found dead April 22. Rats had disturbed the parts, through the operative wound, so that one could not judge whether peritonitis was present. The autopsy revealed a contracted, thickened, and very much congested bladder. Over the anterior opening the omentum was adherent throughout. The ureters were not enlarged, but the capsules of the kidneys were greatly congested. The kidneys appeared normal on cut section. The coupler was still in place and the bone somewhat softened. The rectal mucosa, a few inches above and below the site of the anastomosis, was very much injected. No microscopic nor bacteriologic examinations were made.

EXPERIMENT 2.—A male dog, weight 20 pounds, was operated on April 25, 1899, and died April 27. A post-mortem showed a condition of general peritonitis, with the intestines adherent throughout. A pus-like fluid exuded from the wound incision, and the peritoneal cavity was found full of a serous effusion. The bladder was thickened, contracted and greatly engorged. No urine was present in the bladder. The ureters and kidneys showed a marked congestion, but no enlargement. On cutting open the bladder the coupler was found still in place and softened. There was a distinct line of demarkation at the sphincter vesicæ, showing where the inflammation had stopped. The kidneys, on cut section, showed marked engorgement. Here also no bacteriologic nor microscopic examinations were made.

I am satisfied that the rough usage of the parts and the imperfected technic were the prime factors in producing the fatal results in the first two experiments.

EXPERIMENT 3.—(Fig. 10).—A male bull cur, weight 30 pounds, was operated on May 3, 1899, and killed December 15. This dog, before the cold weather set in, was very lively and active, but with the onset of winter and the lack of proper exercise, began to show signs of decline. For several days prior to the killing, he refused food and drink and was moribund when chloroform was administered. At autopsy, externally there was found, to the left of the operative incision, an old, slightly suppurative stitch-hole abscess. The long median post-mortem incision was carried to the right in order to avoid the original laparotomy incision, and the omentum was found

adherent to the anterior abdominal wall and to the left of the laparotomy scar. The adhesions were comparatively firm. The large omentum had been dragged down in such a manner as to pull down the lesser omentum. The latter, in its descent, had displaced the spleen, so that this organ extended from above downward, parallel to the long axis of the body. In a like manner the stomach and duodenum had been pulled down to a marked degree. The adhesions of the large omentum to the anterior abdominal wall had formed, so that they compressed the left ureter near its place of entrance into the bladder. At this point it was slightly bent and constricted, and enlarged to about twice its normal size above the point of constriction, which enlargement extended up to the pelvis of the kidney. The left kidney itself, as a whole, did not appear enlarged. When laid open, its substance looked fairly normal, though dull, as if in a state of cloudy swelling. The pelvis was slightly enlarged and contained a small amount of a yellowish, somewhat cloudy fluid. The right ureter and kidney appeared normal, and the anastomosis between the bladder and rectum was perfect. The bladder was firmly contracted

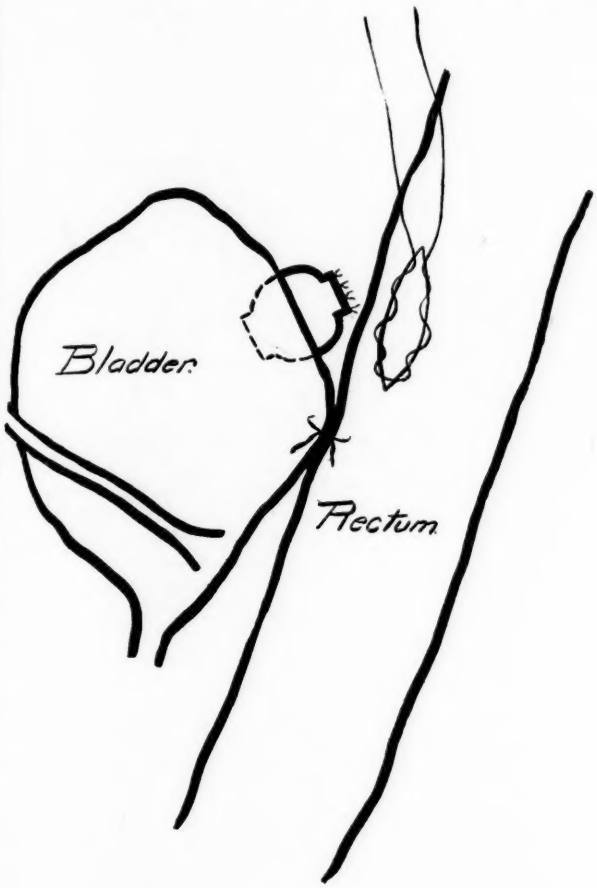

FIG. 3.

and the mucous membrane looked pale on cut section, but showed no evidence of inflammation. The peritoneum in the neighborhood of the anastomosis was smooth and glistening and everywhere appeared normal, except as to the omental adhesions described above. The spleen was dark red in color and its substance firm. The liver was of the same color, but rather soft, and in some places the capsule appeared dull, with circumscribed areas presenting the picture of perihepatic processes. The lungs and heart were normal, although the heart muscle was rather soft and flabby.

At the post-mortem the following technic was conducted and carried out, and in the same manner for all the experiments. The kidneys were freed from the surrounding connective tissue, and a heated platinum loop introduced into the pelvis, and cultures made under the usual aseptic precautions. The ureters were then dissected free and the kidneys, ureters, bladder and part of the rectum removed *en masse*. Pieces of tissue were taken from both kidneys, the spleen and the liver for microscopic examination. These were fixed in Müller's formalin solution, and subsequently embedded in paraffin, then sectioned, and stained according to various methods. The culture-tubes inoculated from the kidneys developed colon bacilli and a white yeast.

Histologic Examination.—The epithelium of the pelvis was found intact in the left kidney. The subepithelial tissue showed

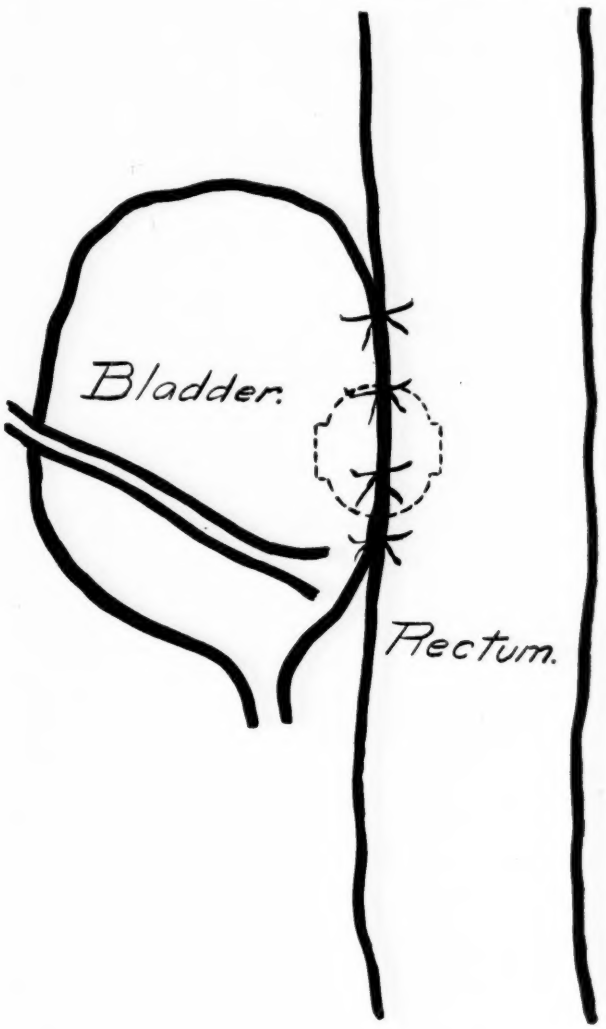

FIG. 4.

a very dense round-cell infiltration. The epithelial lining of the uriniferous tubules was in a state of cloudy swelling, and fatty degeneration. Some of the uriniferous tubules contained hyaline casts. Extensive foci of interstitial inflammation were also found and showed a dense round-cell infiltration. They appeared to be of comparatively recent origin, since tracts of fibrous connective tissue so frequently seen in old chronic interstitial nephritis were not found. The whole kidney, from the subepithelial layer of the pelvis to the cortex, was thoroughly infected with colon bacilli, which were found in enormous numbers in some areas.

The *right* kidney showed changes similar to those found in the left, but they were, however, much less severe. The inflammatory infiltration of the subepithelial layer of the pelvis was well marked, as were also the parenchymatous changes

(cloudy swelling, etc.). Interstitial changes were practically absent. The infection with colon bacilli was moderate when compared with that of the extensive infection of the left side.

The *liver* showed only slight histologic changes. There were present cloudy swelling of the liver-cells and a very moderate amount of small round-cell infiltration around the interlobular veins. The interlobular connective tissue proper was not increased in amount, but a large number of colon bacilli were found scattered throughout the whole liver tissue. The *spleen* likewise showed no very marked histologic changes, but a moderate infection with colon bacilli. Though the cultures from the pelves of the kidneys had developed a yeast micro-organism, none were found in the tissues.

From the above it must be conceded that the dog suffered from a general colon infection at the time when he was killed, but it may be granted, from the histologic examination, that the infection of the kidneys took place only recently, which presumption is borne out by the fact that the dog had been lively and well for six or more months after the operation and had been sick only a short time before it was killed. Probably the omental adhesions with their train of sequelæ, displacement of the spleen, stomach, duodenum and compression of the left ureter, became the agency which led to the infection of the kidneys. The infection of the liver had very likely taken place only recently, by way of the gall-ducts, from the intestinal tract. The generalization of the infection may either have taken place from the kidneys or, what is perhaps more probable, from the liver.

(To be continued.)

SPECIAL ARTICLE.

RELATIONS OF PHARMACY TO THE MEDICAL PROFESSION.*

IV.

INTERNAL MEDICINES.

While considerable latitude may be extended, as mentioned last week, in the ethical requirements, to articles designed for purely external use, such exemption can not be applied to medicinal agents or preparations for internal administration. While it may be broadly asserted concerning every method of medication, oral, subcutaneous or orificial, that the therapeutic effect derived from a remedy depends as largely on the quantity of the particular agent that may "reach the spot" as it does on the amount of the medicine administered, yet for the general therapeutic purposes indicated by preparations for external use, the actual amount of the active agent applied is as a rule of but little consequence compared with the quantity given as a dose of any internal medicine. The only safe rule, therefore, governing the administration of medicine for internal use, is that the composition must be known, and the quantities of the medicinal ingredients of a mixture and the strength of the active constituents of simple preparations must be accurately given. There should be no compromise in this position; medical ethics and medical practice demand it, medical literature and pharmacal practice require it. The identity of the medicinal agent must be certain so that its properties may be disclosed; the strength of the preparation must be known in order that uniformity in effects may be fairly secured and that dosage may be determined.

THE FORMULA PRIVILEGES.

In solutions, liquid mixtures and extractive preparations, the selection of the particular solvents, vehicles and menstrua respectively employed in their preparation is based almost entirely on pharmaceutic considerations. The stability of the solutions, for example, the eligibility or palatability of the mixtures and the permanence of the liquid extractive preparations are the chief desiderata. In official preparations these qualities are secured through the reported researches of practicing pharmacists, and consequently are constantly undergoing improvement. These processes are no more perfect than many a process in operative surgery; the tendency is toward perfection—apparently often attained, but more often only prospective.

The question that now arises is this: If a pharmacist, through his greater experience, skill and integrity, succeeds in producing a more stable, palatable, or otherwise more eligible preparation than has usually been afforded from the same mixture or drug, should he simply make such a working formula public for the benefit of pharmacal literature, or should he be permitted to seek such advantage, through exploitation of the superiority of the preparation to the medical profession, to which he may consider himself entitled as a recompense for his labors?

No doubt from a purely ethical standpoint he should be satisfied with the first course, but there is another side to the question; if he has really made an improvement he might be afforded some protection for a limited period, as is done in France, where the National Academy of Medicine is made censor of medical preparations, and decides which shall be awarded protection. In the same way the AMERICAN MEDICAL ASSOCIATION, possibly in conjunction with the American Pharmaceutical Association or the Committee on Revision of the Pharmacopeia, might form a committee whose annual reports should determine the status of these medicinal articles. A formula may be ever so complete in detail and yet not produce satisfactory results at the hands of different workers. The personal equation must be considered, i. e., the experience, skill and integrity of the pharmacist.

LIMITATIONS IN PRACTICE.

Like some other branches of medical service, pharmacy is yet in its formative stage. With the practice regulated by law in forty-five states, in no state is it required that a pharmacist shall have graduated from a college or attended a school of pharmacy as a condition for examination and license by the state board. The result is that while there is no lack of good schools, these are poorly supported, since the vast majority of young pharmacists find that they can, as a rule, easily pass the necessary examination without attending college; the comparatively small proportion who attend school are forced into competition with the non-graduates, but licensed pharmacists, with the inevitable result of reducing them to the irresistible commercial level. They are also still in competition with the hold-overs who were engaged in the drug business some fifteen or twenty years ago, when the pharmacy laws were first enacted; many young pharmacists, well educated, finding little opportunity to practice pharmacy, begin to lose heart and soon fall into a "rut." This is practically the condition of pharmacy throughout the United States to-day.

A formula is a formula—nothing more; it is incomplete without the *secundum artem*, as in all other technical operations from culinary to music. With the official preparations the methods of manufacture are detailed with great exactness, and it must be assumed that every licensed pharmacist is competent to carry out the directions, yet many can not prepare a perfect "Griffith's mixture." Some may know how but are careless in the selection of the ingredients, do not "expend the necessary synovial fluid," and do not strictly observe the order of adding the many various ingredients. How many pharmacists can make a perfect turpentin-oil emulsion? Some can not even make a perfect one of cod-liver oil. Such a condition should not exist, but it does. So long as a better standard of pharmaceutic service can not be relied on uniformly, the physician must necessarily either pass by the pharmacist by prescribing ready-made medicines, or discriminate in favor of those who are regularly educated and have demonstrated their ability and integrity.

LACK OF STANDARD IN PHARMACEUTIC SERVICE.

It may be said that there are many competent pharmacists in the large cities and sometimes in smaller places, and they are easily discovered. The simplest and most effective method

* The fourth of a series of articles to appear weekly in THE JOURNAL, designed to correct the abuses from advertising and patronizing pharmaceutical specialties.

by which a physician can distinguish the true pharmacist from the pseudopharmacist or "druggist" is to engage him to make a preparation, for example, one of those mentioned above, or one that requires special skill.

It should be remembered that a license is simply a testimonial that the holder has a fair knowledge of drugs and medicines, and can differentiate them and thus prevent error in dispensing and compounding; that he can make the simpler official preparations, waters, solutions, tinctures, etc,; but not necessarily that he has the skill or ability required for any work outside the ordinary routine. If physicians would interest themselves a little more in the younger graduates in pharmacy, and give them opportunities to practice their art whenever possible, these young men would soon be imbued with a professional spirit, realize that pharmacy is a profession—a specialty in medicine—and become better qualified; counter-prescribing and many other evils would cease.

It is not alone in these compound preparations and mixtures that the formula is not always the *sine qua non*. While occultism in medicine belongs to the past, there are many brands of official preparations and even chemicals that maintain the preference of medical men. A considerable number of the older practitioners insist on using one special make of fluid extract of ergot, and this may be said in a still greater degree of one brand of chloroform for use in anesthesia. Until comparatively recently, one special brand of quinin sulphate was the only one that many physicians would use, and in some of the Southern states no other could be sold at all. These discriminations may not have a scientific basis, yet they exist.

The above observations have been made in order to set forth the status of the protective medicines as completely as possible, and to serve as a guide in determining the often-complicated questions involved in their relations to medicine and the medical profession.

In the article in THE JOURNAL two weeks ago, these medicines were classified as follows: 5. Proprietary pharmaceuticals, secret. 6. Proprietary pharmaceuticals, non-secret. 7. Pharmaceutical specialties, mixtures. 8. Pharmaceutical specialties, simples. These will be taken up in their order.

SECRET PROPRIETARY PHARMACEUTICALS.

These are preparations of secret composition—for internal use—protected by trade-marks or copyrighted names, offered for medical prescription. From the fact that they are secret and are sooner or later exploited to the laity, they should never receive medical patronage. They range in degree of secrecy from mixtures of fairly descriptive and therapeutically suggestive names, such as, "Antikamnia" and "Melachol," to the most bare-faced swindles that have ever been perpetuated since Cagliostro replenished the exchequer of Louis XV with gold bricks made by transmutation of the base metals from the proceeds of the bandits who, in his employ, were holding up the nobility and gentry in the Italian mountain passes, on their way to Rome.

A few examples will suffice: 'Essence of Oats," some ten years ago, vaunted as a most wonderful restorative, was found to be a preparation of morphin. More recently a preparation made from a plant discovered by a Texas physician, growing in the everglades in Florida and only collected at the risk of sacrificing human life, was recommended in a New York medical journal as a cure for the opium and morphin habit, but was found on analysis, to be a preparation of opium. "Gleditsopine," an alkaloid alleged to have been obtained from the plant Gleditsopia triacanthos, and exploited by a prominent house, was a mixture of morphin and atropin. "Flora-China," introduced by a concern in Florida, as identical with quinin in all properties save that it was tasteless, on examination proved to be calcium sulphate, gypsum or plaster-of-Paris. These articles were advertised to physicians, and many not only used them, but gave testimonials extolling their virtues.

Besides these examples of rank frauds there are all grades of deceptive articles until a class of mixtures which have suggestive trade-marked names, sometimes associated with a more or less correct definition of their derivation, is reached. One of the earliest and most successful of this class was "Antikamnia," claimed to be a "combination of coal-tar derivatives," and to possess antipyretic and analgesic properties. It proved to be a mixture of acetanilid and caffein with sodium bicarbonate and a little tartaric acid—a combination early adopted by medical men to insure more uniformity in the action of the acetanilid and to modify its effect on the heart. This soon had many imitations and paved the way for the introduction of the various "headache-cures" and "remedies" which, in the form of powders, wafers, capsules and tablets, disgrace the show-cases of the drug stores throughout the land, and, it may be mentioned incidentally, have been furnishing plenty of work for the undertakers. Being extensively employed, they were introduced into the revised edition of the National Formulary, in 1895, as: pulvis acetanilidi compositus—compound powder of acetanilid—"Kamma Fuga"—acetanilid, 50 grams; caffein, 2 grams; tartaric acid, 3 grams; sodium bicarbonate, 45 grams (reduce the ingredients separately to a fine powder and mix them thoroughly).

Other mixtures of similar composition are "Ammonol" and "Phenalgin" or ammoniated phenylacetamid, etc. In these two the sodium bicarbonate is replaced by ammonium carbonate. "Melachol," composition or formula not given, is asserted to be a bulwark against all diseases of the liver that may be caused by candies, rich foods, liquors, or neglect of exercise. To restore and permanently establish vigor of manhood it is "superior to any other known remedy;" "as a tonic, half a teaspoonful in water about meal-time; to move the bowels, one tablespoonful in a glass of water." This preparation is a colorless solution of citrophosphate of sodium and, according to analysis, the following furnishes a similar preparation: sodium phosphate, 100 grams; sodium nitrate, 2 grams; citric acid, 13 grams; water to make 100 c.c. On trituration of the salts with the acid, the new compound is formed and dissolves in the water of crystallization, thus forming a 100 per cent. solution.

The "Formula-preparations" will next be considered.

Therapeutics.

Treatment of Chronic Nervous Diarrhea.

At the recent Congress of Balneology, held at Frankfort-on-the-Main, Pariser (*Berliner Klin. Woch.*, April 2, p. 309) divided cases of chronic nervous diarrhea into several groups. The first includes those dependent on organic disease of the nervous system, such as tabes dorsalis, as well as those attending exophthalmic goiter, and rarely also diabetes. The remaining cases are instances of neurasthenic diarrhea, but here further subdivision must be made for etiologic, diagnostic and therapeutic reasons. The second group includes the cases of toxic diarrhea in which the neurasthenia is only secondarily the result of the intoxication. Toxic nervous chronic diarrhea occurs in consequence of intoxication by dying teniæ, and abuse of nicotin and morphin. The third group includes nervous diarrhea induced by reflex influences. The reflex may arise from the male and female genitalia, the stomach and the duodenum and through parasites. It has also been observed from a hernia of the linea alba and from enteroptosis. Also the obstinate diarrhea not rarely observed in cases of chronic gastritis is considered of reflex nervous origin. Here the irritation consists in the ingesta insufficiently prepared for intestinal digestion. The fourth group includes the cases of simple neurasthenic diarrhea. The condition is often one of a central phobia. Patients thus affected are often attacked with diarrhea, especially when influenced by the thought of being unable to reach a place of refuge. Further, chronic nervous diarrhea also occurs in conjunction with hysteria. The last group constitutes the mixed form of neurosis and intestinal catarrh. The mixed form of neurosis with isolated catarrh of the small intestines is especially obstinate and the prognosis is unfavorable. The latter is better in cases complicated with catarrh of the large and the small intestine or of the large intestine alone. The stools never contain mucus in cases of pure chronic nervous diarrhea. In the cases of toxic and

reflex diarrhea the treatment should primarily be causal and local. In these, besides, an antineurasthenic régime should be observed, and in the purely neurasthenic cases this is of paramount importance. Isolation, that is, removal from previous surroundings, is especially desirable. In severe cases rest in bed and applications of heat are unconditionally required. The diet in all cases of chronic nervous diarrhea should be bland. As opposed to the opinion sometimes expressed, that no particular importance need be attached to the diet in these cases of mixed form of catarrh, the treatment must first be directed to the catarrhal state without neglecting the neurasthenia. Among drugs bromids are particularly valuable.

Urotropin as a Urinary Antiseptic.

At a recent meeting of the Leeds and West Riding Medico-Chirurgical Society, Cammidge (*British Med. Jour.*, March 17, p. 641), after briefly referring to a case of cystitis complicating enteric fever in which urotropin had proved beneficial, gave details of investigations that he had carried out with regard to the action of urotropin on the urine from patients who had taken it, on the bacillus typhosus, the bacillus coli communis and the staphylococcus pyogenes aureus under various conditions. He also described some chemical experiments designed to determine the mode of excretion of the drug in the urine, and the cause of its marked antiseptic and inhibitory powers over the growth of micro-organisms possessed by such urine. The result of these experiments seemed to show that although this action is in part probably due to the urotropin itself, excreted unchanged in the urine, another and more powerfully inhibitory substance is present. This was not thought to be free formaldehyde, but possibly a sodium compound of this substance. There is both clinical and experimental evidence tending to show that one condition necessary for success in using the drug as a urinary antiseptic is that the urine should be acid in reaction, as it is secreted in the kidney. Stress was laid on the marked inhibitory action of urotropin and still more of urine containing urotropin on the typhoid bacillus, and it was pointed out that there is a wide field of usefulness for this drug, both in the treatment of cystitis and other conditions liable to complicate enteric fever and as a preventive against the dissemination of typhoid bacilli by the urine. It was suggested that all patients suffering from enteric fever should receive 10 grains three times a day from the end of the second week on, during convalescence. Reference was also made to the usefulness of the drug in the cystitis accompanying enlarged prostate and stone, as well as the benefits to be derived from its administration in the presence of bacteriuria, some cases of nocturnal enuresis in children and as a preparation for operations on the urinary tract.

Treatment of Inguinal Hernia by Injection.

Scully (*Medicine*, April, p. 265) recommends the following formula as an injection in the treatment of inguinal hernia:

℞. Fluid extract of quercus alba.....℥iss
Solid extract of quercus alba.....℥iss
Carbolic acid crystals.....3ii
Iodin resublimed.....3ii
Morphin sulphate.....gr. x

Mix the carbolic acid and the iodin thoroughly in a mortar, and the other ingredients and triturate slowly. Twenty minims of this solution constitute the maximum quantity for a single injection. Before the injection is made, a truss that will retain the hernia in any position the patient may assume should first be fitted. After the parts have been prepared aseptically, the patient should be placed in the recumbent posture, the hernia reduced, and the index finger placed in the inguinal canal by invaginating the skin over the external ring and pushing the finger up the canal until the tip reaches the internal ring. The needle, which should be a stout one, from 1½ to 2 inches long, should be inserted directly over the finger tip and pushed down quickly until it passes the end of the finger. From 3 to 5 minims should then be injected slowly and, as the finger is withdrawn slowly, the needle is made to follow it for about half an inch. During this time the fluid is still injected slowly, and when the 20 minims have been injected the needle should be withdrawn suddenly to avoid depositing any of the fluid in the subcutaneous tissue. The truss should be placed in position immediately, and the patient lie down for about half an hour. Should pain follow, relief will be afforded by the application of a hot-water bag. The injections should be repeated once a week for three or four weeks, when, if the hernia does not come down on removal of the truss and after testing it by having the patient cough or stoop, no further injections need be given. The truss ought to be worn for at least four weeks more, when, if the patient desires, it may be left off. In most cases it is well to advise the wearing of the truss for from four to six months, and one with a large soft pad is preferable.

Treatment of Eclampsia with Saline Infusions.

At a recent meeting of the Edinburgh Obstetrical Society, Jardine (*The Lancet*, March 31, p. 938) reported 5 cases of eclampsia, in addition to 17 previously reported, treated with saline infusions, in which the diuretic effect had been prompt and marked. The solution used consisted of one dram each of sodium chlorid and sodium acetate to the pint of sterile water. From 2 to 3 pints were injected underneath the breasts, between them and the chest wall, or, if required, into the loose abdominal subcutaneous tissue. If necessary the injections are repeated. Besides, a saline purge is administered, sometimes with bromid and chloral and ten minims of tincture of veratrum viride by hypodermic injection. Of the 22 patients, 6 died, 1 from perforating duodenal ulcer. One was treated with ordinary saline solutions. This result compares favorably with that yielded by other lines of treatment for eclampsia, especially in view of the fact that many of the patients had been seized with convulsions for several hours before coming under observation, and the cases of some even had been considered hopeless. No risk attends the infusion and not a single abscess followed not less than 200 injections. Strict aseptic precautions must be observed.

Evaporating Lotion for Wounds.

Reed (*Annals of Surgery*, April, p. 431) recommends the following formula as an evaporating lotion for the saturation of gauze and application to wounds:

℞. Boric acid solution, 3 per cent..... 80 parts
Alcohol ..... 10 parts
Glycerin ..... 10 parts

The addition of 8 drops of a saturated solution of mercuric chlorid (mercuric chlorid 2 ounces, alcohol 2 ounces, glycerin 6 ounces) to a pint of the foregoing makes a solution of about 1 to 3500.

Diarrhea of Infants.

Cattaneo (*Pedriatria: Phila. Med. Jour.*) calls attention to the value of tincture of iodin in the gastrointestinal infections of infants. This remedy has also been praised by Grosch and Stahan. The following combination is recommended:

℞. Tinct. iodini.....gtt. v to xv
Aquæ dest. .....℥v
Syrupi 3vi
M. Sig. A teaspoonful every two hours. It is well to administer a purgative dose of castor-oil or of calomel before using the iodin. This combination of a purgative with the tincture of iodin gives excellent and speedy results.

Diaphoretic.

℞. Camphoræ .....gr. xxx
Pulv. opii.....gr. ½
Potassii nitratis .....gr. iii
Sacch. alb. 3ii
M. Sig. Take in a cup of tea before retiring.
—*Von Graeffe, Med. Record.*

Diuretic Pills.

℞. Pulv. scillæ
Pulv. digitalis
Caffeinæ, āā.....gr. xxx
Hydrarg. chloridi mitis.....gr. v
M. ft. in pil. No. xxx. Sig. Give one three times a day after meals. —*Practitioner.*

Medicolegal.

Not Necessary to Prove Mental Suffering.—In the case of the Missouri, Kansas & Texas Railway Company of Texas vs. Cox, which the latter party brought to recover damages for injuries sustained by being thrown from the top of the caboose of a freight train, the Court of Civil Appeals of Texas holds that it was not necessary for him to prove that he sustained mental suffering, as the jury was permitted to consider that element of damage as arising from the physical injuries sustained, as shown by the evidence.

Requiring Physical Examination of Daughter.—The Supreme Court of Georgia thinks that it would be going a great length to hold that an action by a father for the loss of services of his minor daughter should be defeated by the refusal of the daughter, who, though not quite 21 years old, was practically a grown woman, to submit her person to a physician for physical examination. Certainly, if, as was alleged in the case of Bagwell vs. the Atlanta Consolidated Street Railway Company, the physician, though eminent in his profession and a thorough gentleman, was distasteful to the daughter, the court says it would be placing on the father, even if she were still under his control, a great and painful burden to require him to coerce her to undergo an examination, or else give up his cause of action. But that was not the case here, for the record showed that the refusal on which the judge's order of dismissal was based was made by the daughter after she had become of age. At that time, the supreme court holds, her father had no right or authority to control her person or her movements. His conduct would have been indefensible, if not criminal, if he had undertaken to compel her, against her will, to allow a physician to examine her. It might be that, if he really desired the examination to take place, he might, by perfectly proper means have induced his daughter to consent to it. But be that as it may, the supreme court goes on to say that it is not prepared to hold that he was in any event bound to pursue such a course. On the contrary, it declares that it has no hesitation in holding that a case should not be thrown out of court because of the conduct of one not a party to it, and who was neither legally bound to obey the plaintiff's orders, nor subject to his custody or control; and so it holds that this case was improperly dismissed. In other words, it holds that an action by a father for the loss of the services of his minor daughter, occasioned by personal injuries, should not be dismissed because she, after reaching her majority, refuses to obey an order of the court in which the action is pending, requiring her to submit to a physical examination of her person by a physician.

Test of Testamentary Capacity.—In the Lawrence will case the appellate division, first department, of the Supreme Court of New York says that there was no question but that the testator was insane in the month of October. The substance of the testimony of the experts in the case was that the testator, on October 16, was in a condition of acute melancholia, with delusions; that the onset of that disease had been of a slow and steady character; and that the condition that he was in at that time was the culmination of a progressive disease, which had continued from four to six months. He made his will May 9. And with only this testimony from which testamentary incapacity could be inferred, the court does not consider that it was shown. It holds that the test was, not whether the testator at the time of the execution of this will was suffering from the disease from which he became insane in October, but whether at the date of the execution of the will the disease had so far progressed that he had not sufficient memory to collect in his mind without prompting, the particulars or elements of the business to be transacted, and to hold them in his mind a sufficient length of time to perceive at least their obvious relations to each other, and be able to form some rational judgment in relation to them, and whether he did intelligently determine to make the testamentary disposition in question, and to execute that intention. Wherefore, being satisfied from the whole evidence that at the time the testator made this will he was able to form an intelligent and rational judgment, and that the will was the result of this intelligent, rational judgment, and carried out his intelligent and rational desire, it holds that the will was properly admitted to probate. Another thing: the court says that the testator, who was at the time of executing the will about 57 years of age, desired very much to be married, but it holds that that certainly was not evidence of insanity or lack of testamentary capacity.

Mental Injury Amounting to Total Disability.—On rehearing, the Court of Civil Appeals of Texas takes a broader view, in the case of the Fidelity & Casualty Company vs. Getzendanner, than it did before, of what mental injury will constitute a total disability, within the terms of an accident policy of insurance which provides for indemnity for such injuries as, independently of other causes, shall immediately and wholly disable the assured from performing any and every kind of duty pertaining to his occupation. It now believes that it was in error in condemning a charge wherein the jury was told that if the injury in question, which was one to the brain, and, as resulting therefrom, unsoundness of mind, immediately and continuously disabled and prevented the assured from performing any and every kind of duty which was materially essential to his occupation in a manner reasonably as effective as it believed the same would have been performed if he had not sustained the injury, then it should find that he had been totally disabled within the terms of such a policy as the above. As it now construes it, such a clause in a policy does not mean that one must be killed, or become totally insane immediately, or totally paralyzed or collapsed, in order to be entitled to the indemnity but only disabled in some manner to the extent that he can not perform some essential duty in the line of his occupation or profession in a reasonably safe, efficient, and profitable manner. And this question of the extent of the disability must always be left to the jury to determine. The occupation of the assured in this case was that of visiting yards and ranches and buying and selling cattle—one in which sound memory and clear, good judgment were essential. So, if the injury to his brain and mind was such as to prevent him from exercising good judgment and drawing correct mental conclusions, in a manner reasonably as effective as he could have done if he had not received the injury, then, the court now holds, he was "wholly disabled," within the meaning of the contract, because upon these qualities of the mind depends the successful performance of the duties of his occupation. If he could not perform these mental functions as well as he did before, but substantially or reasonably as well, then, the court holds, his disability would be only partial, and he could not recover the indemnity. But if he could perform them, though not substantially or reasonably as effective who, it asks, can say that he could perform them rightly and correctly at all. To illustrate further the principle involved, the court asks, among other questions if a doctor's mental balance is lost, and it becomes known that he is not reasonably as accurate and skillful as he once was, though he may be able to visit patients, write prescriptions and diagnose cases with grave and serious mien in the mysterious, technical nomenclature of his profession yet who suspecting his mental disorder, would take his medicine? He would be, it declares, wholly disabled in his profession. Nor does the court find itself alone in the position it thus takes with regard to what constitutes total disability under contracts of insurance. It cites sufficient cases to show the trend of judicial decisions, and, as it expresses it, while the companies have all the time contended for a literal construction, the courts have uniformily adopted a liberal and reasonable one. So it now seems to feel perfectly justified in holding that, as it recapitulates it, if a person is injured mentally to the extent and character that he can not perform some of the essential duties pertaining to his occupation or profession under which he is insured which requires the exercise of a sound mind and good judgment, in a manner substantially or reasonably as effective as he could have done but for the injury then he is wholly disabled, within the meaning of such a contract as this one was, and is entitled to recover the indemnity stipulated for in the policy.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, April 28.

1.—*Contribution to Histopathology of Epidermolysis Bullosa (Hereditaria). (*Concluded.*) George T. Elliot.
2.—*Nitrous Oxid; Ether; Chloroform. S. Ormond Goldan.
3.—*Reply to an Attempted Defense of Antitoxin. J. Edward Herman.
4.—*Relation of Hydrochloric-Acid Secretion to Indicanuria. Allen A. Jones.
5.—*Ethylic Bromid (C_2H_5Br) Anesthesia Preliminary to the Use of Sulphuric Ether. George R. Fowler.
6.—*Diagnosis of Hysteria. Charles W. Burr.

Medical Record (N. Y.), April 28.

7.—*Bottini's Operation for Cure of Prostatic Hypertrophy. (*Continued.*) Willy Meyer.
8.— Past and Present of Refraction. Francis Valk.
9.—*Progressive Pernicious Anemia and Malignant Diseases of the Stomach. Albert Abrams.

Philadelphia Medical Journal, April 28.

10.—*Wesley M. Carpenter Lecture on Infection Through the Tonsils, Especially in Connection with Acute Articular Rheumatism. (*Continued.*) Frederick A. Packard.
11.—*Study of Rectal Valves, Experimental and Clinical. A. B. Cooke.
12.—*Extra-abdominal Shortening of Round Ligaments by an Inch Incision Over the Internal Ring for Freely Movable Posterior Dislocation of Uterus. Augustin H. Goelet.
13.—*Exophthalmic Goiter: Its Complications and Affinities. Roberts Bartholow.
14.—*Some Obstetric Notes. Francis H. Stuart.
15.—*Early Sign of Tuberculosis. Thos. F. Harrington.

Medical News (N. Y.), April 28.

16.—*Some of the Reasons Why the Surgical Treatment of Nasal Disease Has Been Placed on a Conservative Basis. Clarence C. Rice.
17.—*Statistics of One Hundred Cases of Cancer of the Breast and the Results of Operation. Clarence A. McWilliams.
18.—*Cancer Occurring in Acid Parts of Body. A. L. Benedict.
19.—*After-Treatment of Tenotomy. Alexander Duane.
20.— Interesting Case of Syphilis; Epithelioma. L. Blake Baldwin.
21.— New Traction Hip-Splint. James K. Young.

Boston Medical and Surgical Journal, April 26.

22.—*Splenic Pseudoleukemia: Historical Sketch. R. C. Cabot.
23.—*Splenic Anemia. J. L. Morse.
24.—*Splenic Anemia. Henry Jackson.
25.—*Case of Splenic Anemia. J. M. Jackson.

Medical Review (St. Louis, Mo.), April 28.

26.—*Danger from Leprosy. E. S. Goodhue.

Chicago Medical Recorder, April.

27.—*General Symptoms of Brain Tumor and Differential Diagnosis. Archibald Church.
28.— Gynecological and Surgical Observations During a Recent Trip in Europe. A. Goldspohn.
29.—*Roentgen Rays in Treatment of Skin Disease and for Removal of Hair. Wm. A. Pusey.
30.—*Some Therapeutic Observations. Wm. T. Belfield.
31.— Three Specimens of Nematodes Including One Filaria. Wm. A. Evans.
32.— Treatment of Gonorrhea with Silver Salts. Charles D. Lockwood.
33.— Pepto-Mangan ("Gude") in Post-operative Treatment of Gynecologic Cases. Elizabeth A. Riley.

Cincinnati Lancet-Clinic, April 28.

34.—*Ophthalmic Memoranda. David DeBeck.

Medical Bulletin (Philadelphia), April.

35.— Tertiary Syphilis. J. V. Shoemaker.
36.— Relation of General Practitioner to Specialist in Ophthalmology. T. E. Conrad.
37.— Value of Tannigen in Diarrhea. George A. Hewitt.

International Journal of Surgery (N. Y.), April.

38.— A Few Important Factors in Causation of Diseases of Women. Ralph Waldo.
39.— Regional Minor Surgery. (*Continued.*) George G. Van Schaick.
40.— Some Excerpts and Deductions from Records of Gynecological Cases. James N. Martin.
41.— Exomphalos and Strangulated Femoral Hernia, in My Own Experience. Thomas H. Manley.
42.— Treatment of Fractures. W. L. Estes.
43.— Introductory to Mechanical Diagnosis and Treatment of Urethral Diseases. Ferd. C. Valentine.
44.— Technique of Surgical Gynecology. (*Continued.*) Augustin H. Goelet.
45.— Uterine Myoma—Appendicitis. Robert T. Morris.

American Journal of Obstetrics (N. Y.), April.

46.—*Dermoid Cystoma of Pelvic Connective Tissue: With Report of Case. Henry D. Beyea.
47.—*Hysterectomy for Acute Septic Metritis and Peritonitis. Egbert H. Grandin.
48.— Abdominal Hystero-Salpingo-Oöphorectomy by New Method for Multiple Fibroids of Uterus, Fibroids of Ovary, Congenital Malformation of Vagina, etc. J. Coplin Stinson.
49.— Nephro-Ureterectomy. George H. Noble.
50.—*New Method of Treating the Ureter in Tubercular Disease of Kidney and Ureter. Wm. R. Pryor.
51.—*External Palpation Versus Vaginal Examination in Normal Labor. Wm. M. Sprigg.
52.—*Remarks on Operative Treatment of Prolapse. John B. Deaver.
53.— Two Cases of Extrauterine Pregnancy. John G. Clark.
54.— Death after Operation Possibly due to Unsuspected Interstitial Hepatitis. I. S. Stone.

American Gynecological and Obstetrical Journal (N. Y.), April.

55.—*After-Treatment of Peritoneal Section. Henry T. Byford.
56.—*Mortality Resulting from Abdominal Section for Pus in Pelvis. I. S. Stone.
57.— Management of Puerperal Infection. Frederick W. Sears.
58.—*Cranio-Rhachischisis. Henry F. Lewis.
59.— Spontaneous Amputation of Both Fallopian Tubes. Emil Ries.
60.— Review of Non-Operative Treatment of Certain Pelvic Inflammatory Lesions. J. G. Clark.
61.— Some Observations on Intubation of Larynx by O'Dwyer Method, Based on Seventy-five Cases. J. W. West.

Pediatrics (N. Y.), April 1.

62.— Injuries of Nerves due to Fracture. Charles Greene Cumston.
63.— Ophthalmia Neonatorum. J. A. Day.
64.— Night Terrors. Francis Huber.
65.— Case of Mitral Regurgitation and Pulmonary Obstruction. Augustus A. Eshner.

Merck's Archives (N. Y.), April.

66.— Adonidin: Physiologic and Medicinal Properties. Heinrich Stern.
67.— Clinical Uses of Ichthalbin. A. G. Servoss.
68.—*Use of Guaiacol in Malaria. Charles J. Whalen.
69.— Preparations of Mercury. Virginius W. Gayle.

Medical Register (Richmond, Va.), February.

70.—*Indications for and Method of Operating on the Middle Turbinated Bone. John P. Davidson.
71.—*Have We a True Nerve Tonic? Robert F. Williams.
72.— Infantile Septicemia: Report of a Case. B. M. Randolph.
73.—*Value of Hydrogen Peroxid in Treatment of Cutaneous Affections. F. H. Beadles.
74.— Disease of Spine. A. B. Greiner.

Maryland Medical Journal (Baltimore), April.

75.—*Present Status of Appendicitis Question. Hugh H. Young.
76.— Eosinate of Methylene Blue as Blood-Stain. Charles E. Simon.
77.— Two Unusual Cases of Annular Syphilides in Negroes. T. Caspar Gilchrist.

Memphis Medical Monthly, April.

78.—*Obstipation. Hypertrophy of the Rectal Valve. Thos. Chas. Martin.
79.—*Abscess of Liver, with Report of Case. E. M. Holder.
80.— Antipyretics. Their Rational, Scientific and Practical Use. F. D. Dale.
81.— Aortic and Mitral Regurgitation. A Clinical Lecture. Frank A. Jones.
82.—*Surgery of the Biliary Calculi. Wm. D. Haggard, Jr.
83.—*Some Points in Pelvic Surgery. A Rectal Curiosity. Case Report, with Photograph. John L. Jelks.
84.— Case of Tuberculosis of Epiglottis. Richmond McKinney.
85.—*Cholera Infantum. Its Practical Treatment. A. T. Dickson.
86.— Seven Cases of Leucorrhea Treated with Tyree's Antiseptic Powder. A Clinical Report. Edwin Williams.

Illinois Medical Journal (Springfield), April.

87.— The Present Law. J. W. Pettit.
88.— Physician and Medical Law. Hamilton C. Kibbie.
89.—*Drainage and Irrigation of Pleura in Empyema. Conflict of Methods and Opinion. Edmund Andrews.
90.— Ambulatory Treatment of Fractures. Chas. D. Lockwood.
91.— Heredity. John Ross.
92.— History of an Outbreak of Rabies, with Clinical Report of a Case in Human Subject. James S. Mason.
93.— Direct Massage in Treatment of Glaucoma. J. A. Pratt.
94.— Erythromelalgia, or S. Weir Mitchell's Disease. W. J. Eddy.
95.— Mastitis in Puerperal Women. Theodore Thompson.

Occidental Medical Times (San Francisco), April.

96.—*Typhoid Bone Lesions. Herbert C. Moffitt.
97.— Some Remarks on the Widal Test. William Ophüls.
98.— Treatment of Typhoid Fever. R. W. Baum.
99.—*Surgical Treatment of Typhoid Fever. F. B. Carpenter.
100.— Litholapaxy, with Report of Case. G. A. Hare.
101.— Alcoholic Insanity. Mark F. Toner.
102.— Some Diseases of Tonsils. D. H. Trowbridge.
103.—*Zoster Ophthalmicus, with Paresis of Facialis. D. W. Montgomery.
104.— Diphtheria. A. R. Nicholson.

Cleveland Medical Gazette, April.

105.—*Diagnosis and Treatment of Congenital Dislocation of Hip. Wm. E. Wirt.
106.—*Fragmentary Observation of Prognosis of Brain Syphilis. Charles J. Aldrich.
107.— Cases Illustrating the Efficacy of Hydro-Therapeutic Measures. Christian Sihler.
108.— Report of Case of Ovarian Cyst with Twisted Pedicle. Frank E. Bunts.
109.— Operation for Perforated Typhoid Ulcer Eighteen Hours after Perforation. Wm. E. Lower.

Carolina Medical Journal (Charlotte, N. C.), April.

110.—*Simple Operation for Rectocele and Repair of Vaginal Outlet. H. S. Lott.
111.— Case of Placenta Previa, with Happy Termination. J. D. Roberts.
112.—*"The Bête Noire" Cough and its Treatment. W. Peyre Porcher.
113.— Radical Operation for Cure of Chronic Suppuration of Middle Ear. E. R. Russell.
114.— Cases of Angio-Neurotic Edema. J. Steven Brown.

115.— Report of a Case. Wm. P. Shuler.

Canadian Practitioner and Review (Toronto), April.

116.— Case of Hysteria, with Remarks. J. T. Fotheringham.
117.—*Successful Treatment of Three Important Cases of Disease of Eyes by Combined Method of Hg and KI internally and Pilocarpin Hypodermically. G. Herbert Burnham.
118.— Repair of Old Lacerations of Pelvic Floor. M. L. Harris.
119.— Antistreptococcus Serum in Measles. M. Edgar Gillrie.

Western Medical Review (Lincoln, Neb.), April 16.

120.— Medical Legislation: Its Relation to Laity and Medical Profession. R. Harvey Reed.
121.— Floating Kidney. Charles C. Allison.
122.— Some Causes and Results of Auto-Intoxication. J. H. Nicol.
123.—*Acute Suppurative Arthritis of Children. James E. Moore.
124.— Derangements due to Pregnancy. Charlotte G. Hawk.
125.— Case of Fibroma Uteri. D. W. Basham.
126.— Abortion. (*Continued.*) A. D. Wilkinson.

Medical and Surgical Monitor (Indianapolis, Ind.), April 15.

127.— Essentials of Success. E. E. Montgomery.
128.— Report of Case of Fibroma of Neck. J. A. Sutcliffe.
129.— Report of Case of Intestinal Obstruction. E. L. Larkins.
130.— Ocular Complications of Variola. Geo. F. Keiper.

Georgia Journal of Medicine and Surgery (Savannah), April.

131.— Why are Doctors Often Failures? J. G. Carpenter.
132.—*Report of 1371 Cases of Tuberculosis Treated in Asheville Climate. James A. Burroughs.
133.— Irregular Case of Cerebrospinal Meningitis. Wade H. Atkinson.
134.— Astringent Medication in Intestinal Catarrhs of Children. Carl Tittel.
135.— The Southern Negro: His Recent Erotic Tendencies; Causes; Suggestions as to Prevention. S. C. Baker.

Medical Dial (Minneapolis, Minn.), April.

136.— Symptoms and Diagnosis of Smallpox. J. W. Macdonald.
137.— Relation of Varicella to Variola. David O. Thomas.
138.— Prophylaxis and Treatment of Variola. Chas. Nootnagle.

New England Medical Monthly (Danbury, Conn.), April.

139.— Muscular Abscess in Right Inguinal Fossa Opening Appendicitis. J. A. Hopkins.
140.— Notes on Uricacidemia. J. Lindsay Porteous.
141.— "General Practice Including Surgical Work." J. C. Sexton.
142.— Chemical Action a Vulnerate Force in Destruction of Partial Destruction of Limb; Gangrene from Frost-bites. Thos. H. Manley.
143.— Dietetic Treatment of Wasting Diseases. W. H. Murray.
144.— Nerve Depression Following Acute Affections. J. S. Moreman.
145.— Treatment of Gonorrhea and Other Purulent Inflammations with Mercurol. I. W. Short.
146.— Case of Fatal Tachycardia at Menopause. Willard Gillette.
147.— Observations on Treatment of Strangulated Hernia, its Complications and Sequelæ. (*Continued,*) J. Coplin Stinson.

Toledo Medical and Surgical Reporter, April.

148.— Eczema. Wm. Wickham.
149.— Peripheral Irritation in Infantile Convulsions, with Report of Case. W. V. Anderson.
150.— Diphtheria. A. J. Girardot.
151.— A Perrinent Question. Pearce Prentiss.
152.— Hygienic Construction of Dwellings. Agnes M. Gardiner.
153.— Therapeutic Value of Cod Liver Oil. J. D. Ely.

Medical Times (Philadelphia), April.

154.— Review of Potence and Impotence, Physiology, Pathology and Other Embarrassments of Procreating Powers. Review of Aphrodisiacs of Past and Present. Sexual Hygiene in Married and Single Life, etc., etc. "Fecondite" (Zola) and "Kreutzer Sonata" (Tolstoi). (*Continued.*) John J. Caldwell.
155.— Compound Dislocation of Elbow-Joint. C. S. Parkhill.
156.— Action of Urotropin in Uric Acid Diathesis. Arthur Nicolaier.

Oklahoma Medical Journal (Guthrie), April.

157.— Hemorrhoids. L. A. Riely.

AMERICAN.

1. **Histopathology of Epidermolysis Bullosa.**—In this conclusion of his memoir, Elliot reports histologic findings of skin taken from apparently healthy as well as diseased portions. The morbid changes are illustrated. The process seems to be a degeneration of the cells in certain portions of the epidermis, resulting in a molecular death of the nucleus and protoplasm of the cell body. The individual is born with a congenital irritability of the vascular supply of the skin, which responds abnormally to irritation and produces these degenerative changes. Whether there is also a congenital instability of the cells themselves, he is not prepared to say. His older view as to the condition being a dermatitis, he now rejects, and he believes that the prime feature in the process is an acquired or hereditarily exaggerated irritability of the cutaneous vascular system.

2. **Nitrous Oxid, Ether, Chloroform.**—Goldan describes the requirements of an ether inhaler, and criticises the ordinary method of administering. The inhaler should be simple, easily cleaned, capable of being used as an open or closed one, inexpensive, so fashioned as to use the smallest quantity consistent with perfect anesthesia, with no sponges, but fresh gauze for each case; it should have large air-passages, so as not to impede the respiration, no useless complicated ether and air contrivances, and a rubber bag of the fullest respiratory capacity. He describes and illustrates the one he thinks meets these requirements and lays down the rules for its use. The patient should be encouraged to breathe deeply, and the head should be slightly extended on a direct line with the body, and turned fully to one side, which position has the advantage of affording better drainage for the mucus and saliva, while the tongue will fall to one side instead of backward or on the epiglottis. The head correctly placed, should remain so through the operation. There should be no forcing of the inhaler on the patient, but it should be gently applied, removed, and reapplied, impressing on the patient at the time that it is perfectly safe. After anesthesia is complete, it should be removed, but there is no absolute rule as to the length of time the patient's face should be uncovered; this varies for each case. For chloroformization, he would have a rearrangement of the parts of the inhaler; the important point is that there should be a free mixture of air, the patient should not be encouraged to breathe deeply, and the chloroform should be begun drop by drop, at first very slowly. Chloroform vapor is heavy and falls, and the old practice of pouring ℥i to ℥i on a mask and encouraging the patient to breathe deeply is probably responsible for many deaths. The degrees of anesthesia are described, and the various reflexes in the order of their disappearance: the ciliary, corneal and conjunctival reflexes, deglutition, pharyngeal and laryngeal reflexes, vomiting, the anal, the vaginal, and the uterine reflex. His practice is to keep the finger on the pulse throughout the narcosis, preferably on the temporal artery, and the possible anomalous conditions should be kept in mind. The pupil dilates at the commencement and contracts when anesthesia progresses or is moderately dilated. Its sudden dilatation may indicate dangerous or incomplete anesthesia. The pupil is not always a reliable guide; other symptoms should be watched in addition. The condition of the skin, the respiration, etc., must be watched.

3. **Antitoxin.**—Herman replies to a recent paper by Dr. A. Robin, who criticised his former articles which endeavored to show, by statistics, that antitoxin is a failure.

4. **Indicanuria.**—The relation of hydrochloric acid secretion to indicanuria is discussed by Jones, who analyzes a series of cases which he divides into four classes: 1. Those showing free hydrochloric acid with no indican present. 2. Those showing both present. 3. Those showing neither present. 4. Those showing no free hydrochloric acid but indican present in the urine. From an analysis of these cases and consideration of the facts in regard to the stomach secretion, he concludes that other means than free hydrochloric acid must be depended on to prevent formation of indican in the intestine. It would appear that so long as sufficient hydrochloric acid is secreted by the stomach to satisfy the nitrogenous elements and allow them to pass through the various steps of the cleavage in pepsin-hydrochloric acid digestion, excessive putrefaction is not likely to arise, even if sufficient hydrochloric acid is not secreted in a free state, that is in a normal or almost normal acidity of the gastric contents. When the total acidity is gradually reduced, putrefaction is likely to occur. He finds that excessive indican is more apt to be associated with obstruction in the small intestine than in the large, and it is also found with gastric ulcer where there is a great amount of free hydrochloric acid in the stomach. It has been associated more particularly with inflammatory states of the intestine. If the albuminous constitutents of the food undergo digestion in the intestine, they do not putrefy, and in many cases indicanuria must be looked on as an index to the adequacy of intestinal digestion without regard to the state of the stomach.

5. **Ethylic Bromid.**—The use of ethylic bromid—C_2H_5Br—as a preliminary to ether anesthesia is recommended by Fowler, who reports a case. He places 3i to 3ij of ethylic bromid on the inhaler, and, in from thirty to forty-five seconds, acording to the freedom with which the patient breathes, the administration of the sulphuric ether is begun,

without changing the inhaler, and proceeded with as in ordinary ether anesthetization.

6. **Diagnosis of Hysteria.**—The practical importance of the diagnosis of hysteria from organic disease of the nervous system is self-evident, both for the physician and the patient. The leading points are given by Burr: The diagnosis is necessarily by exclusion, and the negative elements are as important as the positive. The mode of onset and combination of symptoms are to be noted. Sometimes the nature of the symptom itself may indicate the real nature, and anesthesia is important in this regard. It, however, is not always present; there is no one pathognomonic symptom of hysteria. There may be hyperesthesia, and he points out some conditions in which it may occur. The diagnosis of the fit may be difficult or easy. Palsy, which seems to follow it, is not of diagnostic value. There is one type of flaccid palsy which is seen only in hysteria. In this, though there may be complete loss of voluntary movement, the patient is able to keep the palsied extremity in any position in which it is passively put. The other symptoms of diagnostic value are noted. One symptom is important as distinguishing hysterical paraplegia with contracture from organic disease. In the latter the muscular spasm is extensor and lessens with flexion.

7. **Bottini's Operation.**—Meyer gives the details as to the preparation of the patient, the instruments employed, the *modus operandi* and the after-treatment. He favors filling of the bladder with sterilized boric acid water, and believes that the Lewin experiments indicate the dangers of dilatation by air. The length of the incision, indications, etc., are also fully discussed. The paper appears to be a very complete handling of its subject, and is to be concluded in a subsequent issue.

9. **Progressive Pernicious Anemia and Malignant Disease of the Stomach.**—After reporting two cases, Abrams formulates the following conclusions: 1. Arsenic is a true specific in pernicious anemia, and is as certain in its immediate results as is mercury in syphilis, quinin in malaria, or iron in chlorosis. The specificity of arsenic is so great that in no case of grave anemia are we justified in excluding the progressive pernicious variety, even though the blood examination is negative, without a heroic trial of arsenic. Like the other specifics, it produces relative cures and can not be regarded as a prophylactic, owing to the frequent relapses. It may be given as Fowler's solution, beginning with three-minim doses well diluted after each meal, and increased by one or two minims daily according to the urgency of the case, until twenty-five or thirty minims are taken three times a day. A safer rule is to push it to the point of toleration and maintain it at this point until the blood examination shows the results desired. The appearance of its physiologic effects—edema and itching of the eyelids, gastro-intestinal irritation, etc.—is a signal for its temporary discontinuance. When arsenic can not be given by the stomach, it may be administered subcutaneously or even by the rectum. 2. In association with arsenic, assimilable food and rest are indispensable. 3. The use of intestinal antiseptics in this as well as in other diseases is a mere therapeutic refinement not sanctioned by bacteriologic reasons, and they ought, therefore, not to be employed as a routine measure. In the Italian literature one finds some authentic evidence of the good effects from thymol, its administration being suggested by the theory that pernicious anemia is caused by intestinal absorption of products which are destructive to the red blood-corpuscles. 4. Iron is not only useless but is apt to create digestive disturbances. 5. Bone-marrow is said to be curative, but it induces nausea and aggravates existing gastro-intestinal troubles. 6. Gastric disturbances suggest stomach lavage. The character of the food ingested must be determined by the results of a chemical analysis of the stomach contents. 7. To counteract the great reduction in the quantity of blood weak saline solutions may be given by the colon or preferably in the subcutaneous tissue. 8. Relapses are best prevented by minute attention to dietetic and hygienic details.

10. **Infection Through the Tonsils.**—In continuing his article (see last week's JOURNAL, ¶ 2, p. 1120), Packard reviews the literature as to the possibility of chorea, nephritis, abscess, rheumatism, etc., originating from tonsillar infection. The paper concludes with an extensive bibliography of the past ten years.

11. **Rectal Valves.**—Cooke first gives the history of the discovery and recognition of these valves, and states, as his own opinion, that he is prepared to fully endorse Martin's conclusions as to their existence. He points out the possible fallacies in examination for them. Their action in the production of disease is next discussed, and he considers that they are responsible for a considerable proportion of chronic obstipation, or obstruction of the bowels in the lower section, as distinguished from constipation. The treatment is almost invariably operative, as the condition is rarely diagnosed in its early stages. The radical operation consists in incising the valves' free margin down to the muscular coat. He cautions as regards the operation; though apparently easily borne if properly performed, it is one of the most delicate operations in surgery. The part they play in strictures and rectitis is also discussed, and he reports five cases illustrating the value of the proctoscope and the more common forms of lesions of these valves.

12. **Shortening of Round Ligaments.**—Goelet describes a method of shortening which he considers has special advantages. The technique is described in full.

13. **Exophthalmic Goiter.**—Four cases, uncomplicated and with special complications, are reported by Bartholow. He calls attention to the purely functional character of some of the similar types. As regards the treatment, he thinks galvano-faradism is the most efficient agent. He has usually applied the descending stabile current so as to include within the circuit the pneumogastric and cervical sympathetic nerves, and in cardiac cases much good is derived from spartein sulphate and picrotoxin, which may be combined with sulphates of iron and manganese. In more chronic cases with valvular lesions and degeneration of the thyroid and the skin pigmented, the best results are had from the combined solution of iodid and bromid of sodium and arseniate of sodium. As to hygienic management, he recommends non-exhaustive systematic exercise, moderate mental occupation, and thinks close confinement, as in the rest cure, is damaging.

14. **Obstetric Notes.**—The three points considered are preparation of the patient for labor, in which Stuart suggests careful examination in the later months, also uranalysis and instruction as to asepsis. The time to use forceps may vary, but should usually be early in cases where there is exhaustion of the uterine muscle or disproportion preventing molding and adjustment and persistent occipito-posterior position. As to repair of the injuries, he has found it of advantage to postpone it until a convenient hour in the first or second day after the operation. For intestinal sutures he would use small-sized catgut, and be sure to include enough tissue in the grasp of the sutures. For external sutures, silkworm gut, iron-dyed, is preferred.

15. **Tuberculosis.**—An early sign referred to by Harrington is a widely dilated state of the pupils, not paralytic but apparently due to some irritation, possibly systemic. He has come to associate this with early tuberculosis.

16. **Nasal Disease.**—Rice reviews the conditions of nasal disease, in which formerly a lesser degree of conservatism prevailed as regards operative interference than is now coming to be the rule; he also shows how we are learning to distinguish between the need of operation and the utilizing of the facts for the benefit of the patient. The one thing that he thinks would justify his paper is that we are beginning to recognize the influence of alcohol and tobacco.

17. **Cancer of Breast.**—A summary of the analysis of 100 cases of this affection is given by McWilliams. Trauma was present in 44.6 per cent. of the patients, 74 per cent. were married; 66.6 per cent. had borne children, the average number to each, 5; pain was present in 56.2 per cent.; nipple retracted in 45.2 per cent.; right breast involved in 51 cases, left in 49; axillary glands palpable in 48.9 per cent., cancerous by the microscope in 78.6 per cent. The average age was 49 years, 6 months, 26 days. The mortality of operation was 4 per

cent.; average length of time in hospital, 20 days; prolongation of life for one year resulted in 59 per cent., for two years in 36 per cent., and the cured—no recurrence at end of three years—34 per cent. Recurrence took place in one year in 21, in two years in 28, locally in 15, in the lung in 6. The average length of time in recurrent cases from operation to death was 1 year, 2 months 20 days, that from the period of recurrence to death, 5 months.

18. **Cancer Occurring in Acid Parts of Body.**—The relative frequency of primary cancer of the stomach as compared with that of the bowels and certain portions of the latter as compared with the mass is significant. Benedict has studied the subject and finds that a great majority of cancers develop in the acid media of the body. He points out that the localities where the natural secretions are acid are elective points for the affection, e. g., the stomach or uterus, and that in other regions where it is liable to occur, the abnormal acidity is possible and frequent. Whether the reaction is the determining factor or not, he does not pretend to state.

19. **Tenotomy.**—The after-treatment of tenotomy, preferred by Duane, is to utilize the directive force of the eyes themselves, and if necessary, by suitable exercises, to gradually substitute a more accurate correction for the approximate one produced by operation. He gives details of treatment advocated, and is so convinced of the value of the results that he regards the technique of the operation of subordinate importance. By the latter we can set the eyes fairly straight and in a position in which, being left free to move, they themselves will work toward an absolute correction. Therefore it makes little difference how we do a tenotomy, but much how we treat the eyes afterward.

22. **Splenic Pseudoleukemia.**—Cabot suggests that we should either abandon the term "splenic anemia," or else take up that of "lymphatic anemia," as applied to the association of lymphatic enlargement with impoverished blood. Or if we agree with Osler that there is no relation between enlargement with the same condition, we ought to make a sharp distinction between the two varieties of leukemia. In going over the literature, it is difficult to separate the forms here considered and those cases due to malaria, syphilis, etc. He gives the diagnostic points. The prognosis, according to Osler, seems to be relatively favorable, though writers differ on the subject. The operation of splenectomy is rational and seems to have been of advantage in one of Osler's cases.

23, 24 and 25. **Splenic Anemia.**—Morse reports two cases with the findings from blood examination, in one the disease may have been of syphilitic origin; the other was probably a relic of some infantile condition, as anemia with splenic enlargement is not uncommon in infants and especially common in rickets. Henry Jackson reports on the only case found in the Boston City Hospital, and he thinks very few if any patients with splenic anemia have entered it. He suggests more careful observation on this point. Another case is reported by J. M. Jackson and Hill, from the out-patient department of the Massachusetts General Hospital.

26. **Danger From Leprosy.**—According to Goodhue, the danger from leprosy in this country is to be found in the general neglect to watch for and isolate patients. It is therefore greater from our home foci in Minnesota and Louisiana, and from over the border in Mexico and Canada, as well as from tropical regions generally, than it is from our new possessions, especially Hawaii, where it is under close observation and well guarded against. If the fancied danger from leprosy from Hawaii is going to arouse us to the real danger of leprosy in our midst, it would be another of the many advantages of annexing the islands.

27.—See abstract in THE JOURNAL of April 7, p. 873.

29. **Roentgen Rays in Skin Disease.**—Pusey calls attention to the value of the Roentgen rays for the purpose of epilation and in the treatment of eczema, lupus, etc. The practical points to be noticed are to avoid too great strength or tension of current, too long or frequent exposures or too close proximity to the skin. At the beginning the sittings are not longer than five minutes, and the distance not less than 12 cm. The current, not more than 1.5 amperes and 12 volt strength, should be employed. The ordinary skiagraphic currents are not desirable. Suitable lead masks for protecting contiguous surfaces should be used, and the personal idiosyncrasy must be looked after. The evidence that exposures have been carried far enough are: 1. Appearance of erythema and pigmentation. 2. Blanching of the hair. 3. Loosening of the hair. In the treatment of hypertrichosis great care should be used to avoid irritation and, in inflammatory disorders this is not so important, as a slight degree of inflammatory reaction is desirable, but it should be held at this point and not be carried to a painful degree.

30. **Some Therapeutic Observations.**—Belfield reports three cases of the use of gelatin as a hemostatic in persistent hemorrhages, in two of which there was complete success, in the third unequivocal failure. He would, in view of Bauermeister's experiments, refrain from using these injections in extensive nephritis. He also reports two cases of tumor of the breast due to syphilis, which was diagnosed as carcinoma, and he would impress on all his patients the idea that syphilis is not curable as a rule, and that subsequent, obscure or refractory disease should have specific treatment. He also mentions a case of the successful use of carbolic acid in a case of tetanus.

34. **Ophthalmic Memoranda.**—DeBeck reports several cases of eye trouble, among them one of gouging in a fight where he inserted a glass ball in the empty eye socket for cosmetic purposes, with good results. The patient afterward wore an artificial eye with the most satisfactory deceptive effect. He thinks it the only case in which an artificial vitreous has been inserted in a traumatic case twenty-four hours after injury, with success. Another instance reported is that of complete enucleation of the eye by a jet of water from a nozzle connected with two lines of hose by a Siamese coupling. The nozzle got away from those handling it, and the jet struck the man squarely in the face, at a distance of three or four feet, and no trace of the eyeball could be found. It was completely enucleated by the water. The patient made a satisfactory recovery. He also reports other cases of interest.

46. **Dermoid Cystoma.**—A case of dermoid cystoma is reported by Beyea, who gives a very thorough discussion of the subject. In his case he finds it in no way associated with the ovary. The literature of the condition is thoroughly worked up.

47. **Acute Septic Metritis and Peritonitis.**—Grandin finds that while a great majority of patients with puerperal infection recover with minor operation, about 1 per cent. die, notwithstanding operative treatment, unless it is employed early. The importance of early diagnosis, therefore, is clear. When septic symptoms appear in the puerperium, the patient should be most thoroughly examined, preferably under anesthesia, to differentiate saprophytic and streptococcic infection. Sapremia yields to local operative treatment, unless too long delayed or complicated by streptococcic infection. When the clinical phenomena are of low grade, and the pulse rapid in proportion to the temperature, it is a warning of general systemic infection. Sapremia having usually been ruled out and other disturbances such as pneumonia, urinary toxemia, etc., being excluded, exploratory abdominal section is indicated for positive diagnosis. By this it is possible to remove the infectious foci, before the system has been involved and the case become hopeless. The streptococcus infection, however, is so rare that it is only exceptionally that abdominal section is required.

50. **Surgery of the Ureter.**—Pryor describes a case of tubercular dermatitis and nephritis in which he had to remove the right kidney, and after enucleating the ureter, he inverted it into the bladder as is sometimes done with the appendix in the bowel. This was done by passing a long surgical probe into the bladder and through the ureter, suturing it to the end of the severed ureter. It was then drawn back into the bladder, inverting the tube. The ureter sloughed off and the probe was withdrawn the third week. Cystoscopy repeatedly showed all traces gone except a slight elevation at the site of the ureter. The convalescence was normal.

51. **External Palpation Versus Vaginal Examination.**

—Sprigg reviews the conditions of labor and mentions that to conduct a case ideally, having previously excluded the existence of deformity and abnormalities, the progress of labor must be observed by extravaginal methods, and after delivery nothing must be permitted to enter the vagina.

52. **Prolapsus Uteri.**—Deaver condemns the Alexander operation and intra-abdominal shortening of the round ligaments and vaginal hysterectomy unless there is a pathologic lesion warranting it; he advises ventral fixation. When the prolapse is complete, anterior or posterior colporrhaphy, or both may be necessary. "The cystocele is corrected by the removal of a sufficiently large oval flap, denuding the mucous membrane and submucous tissue, by which the muscular coat of the bladder is exposed. The incision extends from immediately behind the meatus urinarius to the cervix uteri. Two rows of catgut sutures appose the edges of the incision, the deeper taking the submucous and the muscular coats of the bladder, and the superficial the mucous membrane. The denudation of the anterior vaginal wall in the correction of the cystocele, and of the posterior vaginal wall in the repair of the torn or reflexed pelvic floor, is made with a scalpel. The repair of the anterior vaginal wall is the first step in the operative technique; when this is accomplished the rubber gloves worn are discarded and a new pair, previously sterilized, put on. The next step is the ventrofixation, and, lastly, the perineum is restored.

55. **After-Treatment of Peritoneal Section.**—The after-treatment recommended by Byford consists of the use of 4 drams of fluid extract of cascara, or some equivalent, two hours before operation, and dram doses of sulphate of magnesia every hour after the patient awakes from the anesthesia; a high glycerin and water enema—℥ij to iv—every two hours after. A high glycerin enema was given before the patient left the table after operations in which the adhesions were separated and raw surface left. A prompt movement of the bowels and free passage of flatus not unfrequently resulted before the others were given, hence he began to give it as a routine practice. As he stated in a former paper, this treatment must as a rule not be discontnued until the patient passes flatus, not only with the enemas but also frequently between them, i. e., efficient peristaltic action should continue at intervals. Means should also be taken to maintain frequent peristalsis and a daily evacuation of the bowels after the first day, and he frequently gives two drams of sulphate of magnesia or two or three ounces of Hunyadi water night and morning for two weeks, regulating the doses according to the effects.

56. **Mortality From Abdominal Section.**—Stone concludes his article as follows: 1. The abdominal route may be selected in the vast majority of "real pus cases," because it not only gives a better opportunity to deal with diseased pelvic structures, but also facilitates the inspection of the abdominal viscera and the relief of any pathologic condition of these organs. 2. The vaginal route is still used by the writer as occasion demands, as when a "pelvic" abscess is pointing in the vaginal vault. 3. In the majority of cases, then, abdominal section is advised; still, in a certain small number, vaginal puncture, and in a third class, when the abscess is large and situated "high" in the pelvis, it is reached through the abdomen, evacuated and drained without attempting "enucleation" if the patient is evidently too much exhausted to bear a radical operation. In short, pus should be sought for and evacuated from that quarter which gives the easiest approach and speediest and safest exit consistent with the present condition of the patient, and having in view her permanent restoration to health.

58. **Cranio-Rhachischisis.**—Under this head Lewis decribes a number of interesting cases of the defective closure of the cranium, with illustrations.

68. **Guaiacol in Malaria.**—Whalen reports the subsequent history of some cases previously reported, with several additional ones. In all his ideas in regard to the benefit of the drug, in cases where quinin fails, as expressed in an article abstracted before (see THE JOURNAL of March 10, ¶ 47, p. 356) are confirmed by these later experiences.

70.—This paper has appeared elsewhere. See THE JOURNAL of April 14, title 41, p. 924.

71. **Have We a True Nerve Tonic?**—Williams gives the results of his experience with various drugs as nerve tonics, and concludes as follows: 1. For long-continued use in conditions of weakened nerve power, strychnin, arsenic, phosphorus, and the hypophosphites are unsuitable on account of the ultimate depressant effect which their continued use may occasion. 2. In the glycero-phosphates we have preparations so nearly identical with the natural phosphorus compound of nerve substance as to be more readily appropriated by depressed nerve tissue than any other phosphorus preparations. 3. This near identity of the glycero-phosphates with lecithin, and the absence of nerve stimulation produced by their administration, render them true nerve tonics. 4. The success of those of the profession who have used these preparations entitles them to trial by the profession generally.

73. **Peroxid of Hydrogen.**—The use of this is recommended by Beadles in the following conditions: eczema, which may be sometimes aborted by prompt treatment; impetigo contagiosa; lichen planus, in which no other drug gives such good results; tinea versicolor; tinea circinata; chloasma; freckles and bromidrosis.

75. **Appendicitis.**—Young gives a review of the general literature of appendicitis and of the opinions of surgeons in regard to the question it involves. There is a general agreement as to the mortality of the severe, acute cases and the successful outcome of mild ones without treatment, the safety of operation during intervals, and the frequency of relapses, but on other points there seems to be a large range of opinion. The general tendency, however, on the whole, would appear to us to be more conservative than radical, as opinions go on this subject. There is need, as he points out, of exhaustive statistics on these points. The paper is followed by a symposium of communications from various physicians and surgeons in regard to the indications for operation and its favorable moment.

78. **Obstipation.**—The chief symptoms of obstruction and abnormal conditions of the rectal valves are difficult and unsatisfactory straining at stool, with occasional diarrhea and flatulence and borborygmus, and later attacks of intestinal intoxication and neurasthenia. The pathogenesis may be a normal increase of fibroid tissue from any cause. The diagnosis is easily made with the proctoscope. The operation is described and the amount of incision of the valves is estimated by inserting the hook beyond it and drawing it down toward the operator until the presence of the end of the hook shows in the form of a blanched eminence; and in the operation of division the valve should be transfixed at a point considerably nearer the free margin than the estimated position of the eminence. The valve should then be seized by a tenaculum on either side of the point selected for the section, the knife made to transfix the fibrous border of the valve and divide a few fibers of this tissue and the mucous membrane covering it, by cutting its way through the free border of the valve. This should be transfixed with the bistoury at a moment when the valve is situated at a right angle to the wall of the intestine. If the valve be pulled downward by means of the tenaculum, so that it presents an inclined plane toward the operator at a moment when the bistoury is made to transfix the conjoined tendon, the superior dense fibrous lamina will have a tendency to force the knife outward and through the wall; hence the necessity of a proctoscope of a special length for each valve, that its end may be carried to the valve instead of the latter being pulled down to the protoscope. But a few fibers of the conjoined tendon are to be divided by this bistoury. After the incision is thus started a scalpel-like knife, provided with a similarly built handle, should be used to deepen the incision. In some cases the valve should be cut in two places. The instant the conjoined tendon is divided a gaping wound will be presented to the eye. This wound-cavity is irregularly pyramidal and open at its apex; the two walls running away from the apex consist of the fibrous laminæ of the valve; the base is made up of the uncut circular muscular fibers; external to the circular muscular fibers are the longitudinal muscular and peritineal coats of the rectum, which this technique fortifies against accidental injury.

79.—See abstract in THE JOURNAL of Dec. 2, 1899, p. 1420.

82.—Ibid., Dec. 23, 1899, p. 1614.

83.—Ibid., Dec. 2, 1899, p. 1421.

85.—Ibid., p. 1420.

89. **Empyema.**—The contrary views as to the value of drainage and irrigation in empyema are noticed by Andrews, who tabulates the authorities as they have expressed their views in favor of incision, drainage, irrigation and resection of ribs. He considers intercostal incision safer than resection in most cases, especially in children, but not sufficient for every sort of case. As regards irrigation, his experience has been that by avoiding toxic substances, using only warm boric acid solution, small and weak at first and gradually increased, poisoning and shock can be avoided and bronchial fistula discovered before dangerous flooding has taken place if care is used with small quantities at first. The most frequent necessity for resection is in case of old cavities with strong cicatrices, preventing expansion of lungs and whose granulations are not strong enough to fill the space. In these cases we should sacrifice the ribs to let the thoracic walls fall in and fill the cavity. In cases where there is a pseudomembranous lining of the pleura it can be eventually washed out mechanically if a large tube is used.

96.—See abstract in THE JOURNAL of March 24, p. 750.

99.—Ibid., p. 751.

103.—See abstract in THE JOURNAL of March 31, p. 815.

105. **Congenital Dislocation of Hip.**—After giving ten cases illustrating the diagnosis of this condition, Wirt describes the methods of treatment, which he narrows down to two, viz., the bloodless method of Lorenz and the cutting operation by Hoffa, modified by Lorenz and Whitman. Four cases are reported that were treated with more or less success. He finds that the non-cutting reduction method is rarely effective after the age of 4 or 5, and when it fails the other should be employed up to the age of 8 or 9. Above this it is not worth while to attempt it, on account of the marked anatomic changes which have taken place. In his own method, he does not cut the short muscles as advised by Lorenz, or the long as Whitman advises, but uses considerable force to bring the head of the bone to its normal site.

106. **Brain Syphilis.**—The "fragmentary observations given by Aldrich refer especially to the accurate diagnosis of cerebral syphilis, the limited application of the general laws of prognosis in the specific lesions, the tendency to relapses, the importance of giving attention to the age, sex, social status, alcoholism, cachexia, etc., in each case, and the constant danger of pathologic accident in syphilitic individuals. Later he notices the favorable influence of specific treatment in these cases as compared with similar clinical conditions of non-specific origin.

110. **Rectocele.**—Lott describes a method of operating which he thinks has certain advantages over others, though not widely differing from them. It consists in making a triangular flap on the vaginal wall at the highest point on the rectocele, from the base of which two cuts are carried down to the point on each labium where apposition will re-establish the normal perineum. The space between these, excepting the triangular space mentioned, is denuded and the edges of the outer incision brought together by buried sutures fastened by perforated shot, making altogether a sort of a Y-shaped line of sutures. He thinks this the means of attaining the four cardinal wants of the case, viz., repair of the perineum, taking the slack from the lateral walls, removing the rectocele, and supplying in its stead, in the posterior wall, a contracted, cicatricial column, with prong projections into the vaginal fornix, which most nearly restores the parts to their normal function and gives support to the organs above.

112. **Cough and Its Treatment.**—The reflex origin of cough is especially emphasized by Porcher, who points out the localities from which it may arise, viz., nasal and nasopharyngeal cavities, pharynx and laryngeal tonsil, the larynx and ear. A purely neurotic one is also mentioned and affords some of the most brilliant successes of the physician. In cough we should find the cause and treat that. He finds that the C. and C. mixture of chloroform, codeia and hydrocyanic acid has an excellent effect on pharyngeal irritability. Where there has been much nasopharyngeal catarrh, he has had benefit from the use of a gargle consisting of carbolic acid and glycerin, biborate of soda and tannic acid. In tubercular cough nothing is so good as absolute rest of the throat; the gouty and lithemic one requires treatment for that condition, and he has met with cough where specific treatment only was effective. In order to stop the nervous form, the mental impression is a requisite and both constitutional and local treatment are useful. The former may consist of a sharp cathartic for its revulsive effect. He usually makes an application of the galvanocautery to the lingual tonsil, because the explosive effect of the cough is chiefly against that gland, and if it is made a little sore the patient will take more pains to control it. Cough medicine is hardly necessary in these cases, but the above C. and C. mixture may be soothing. It is hard to say just what effects hypnotic suggestion has in these cases, but there is no question that it goes a long way.

117.—See abstract in THE JOURNAL of Sept. 2, 1899, p. 622.

123.—See THE JOURNAL of February 3.

132.—This paper has appeared elsewhere: See THE JOURNAL of April 7, title 46, p. 863.

FOREIGN.

British Medical Journal, April 21.

"Riding Fragment" in Fractured Leg. C. H. GOLDING-BIRD.—Fracture, especially of the tibia, is noticed at length with special reference to the coaptation of the fractured ends. In the beginning the author calls attention to the real test of the value of any method of treatment, and the tendency of late years to authorize cutting down on the simple fractures to insure very direct apposition. One of the first things is to have the injury repaired at the earliest possible moment. He thinks operation for simple fractures has been carried to extremes. There is a possible danger in skiagraphy; the patient may have a skiagram taken after the fracture has been treated and find a certain deformity and on this may base a claim of improper treatment. If the utility of the limb is perfect, though there may be a remnant visible in the skiagraph, he doubts whether the success of the treatment has been in any way impeded and it is not advisable to incise simple fractures simply to meet the demands of the skiagrapher. The special subject of the lecture, however, is the "riding fragment," and the main point made is that the most frequent fracture is not the oblique, as is commonly supposed, but is rather what is called the spiral type, and for this reason the continuous retention of the bone in place is more difficult. If the tibia is intact it itself acts as a splint, but the more usual rule is for it to be a great opponent to restoration, and the arrangement of the muscles of the two bones causes a spring action, the fibula pulling the muscles of the tibia apart. We have to suppose that jagged ends of the broken fibula have been driven into the surrounding fibrous connections and firmly held there in a false position, to understand how a rotary action applied to the tibia to lock the spiral would, for anatomic reasons, give an equally rotary reaction to the fibula, the fracture of which bone not being spiral would not be similarly influenced. Hence the fractured ends of the fibula, thus twisted, act as springs until the force is removed, or continue their spring action until they unlock the adapted spiral. Golding-Bird does not claim this idea to be altogether new, but he believes the fibula to be the main cause of the trouble constantly found in setting fractures of any portion of the shaft of the tibia, hence the usefulness of operation in these cases.

Calculi Impacted in the Ureters. DAVID NEWMAN.—Newman describes the pathology, symptoms, and surgical treatment of impacted calculus in the ureter, and the symptoms produced by retention of urine in this way are quite fully discussed. The methods of diagnosis are pointed out and illustrated. Much can be done by palpation through the abdominal parietes, provided the walls are flaccid and the patient thin and the stone situated above the brim of the pelvis, but if the patient is corpulent and the muscles rigid this may not be of much use. When the stone has passed the lower third

of the ureter, examination with the finger in the rectum and vagina may lead to its detection. Cystoscopic examination may be of great value. Sometimes the calculus is arrested at the outlet of the ureter and forms a tumor in the bladder, which can be treated immediately through this organ. The Roentgen rays have not been of much value. The distinction from other obstructions, such as tumors and displacements of the pelvic organs, adhesions, etc., is sometimes a little difficult, but the usual suddenness of the obstruction is a characteristic in most cases, and other disease causing pressure of the ureters is generally so prominent as to be recognizable. The adjustment to such cases, however, does not include the calculus. The most important cases to distinguish from calculus obstruction are such as kinking of the ureter, as may happen with movable kidney, or where the impediment arises from angular insertion of the ureter. The treatment depends on a thorough understanding of the conditions. If there is reason to think only one side is affected, it is advisable to await the course of events, and frequently the obstruction is spontaneously relieved and no permanent harm results. Sometimes massage, shampooing and fomentations, etc., are useful. Opium to relieve pain should be used with great care, as even small doses may have serious effects when the kidneys are obstructed; it is better to use other methods, as hot fomentations, baths, or even an anesthetic, which may so relieve the spasm as to facilitate the passage of the calculus. Change of position may have some effect. When the ureter of the only working kidney is affected, operation is necessary, and when it can not be felt with the finger, it will have to be reached through the abdominal parietes. The methods of operation are described. If the stone can be pushed backward into the kidney and removed by nephrectomy, this is probably the best method and the sound should be passed down the ureter to be sure no further obstruction exists. If it is firmly fixed in the ureter, incision should be made, and this can afterward be closed by sutures.

The Lancet, April 21.

Coxa Vara. C. B. KEETLEY.—Coxa vara—a deformation of the femur in which the head sinks to a lower level than the normal, sometimes almost touching the lesser trochanter—is a sequence of rickets. Keetley thinks in many cases of genu valgum the knee deformity is a compensatory curve to a certain degree of coxa vara. He mentions a characteristic alteration of bones of the face and forehead, a sort of expansion and an appearance of thinness in the orbital and nasal regions. Pain is the first symptom and later there is even limitation of the movements and lameness. In diagnosis it should be differentiated from dislocation by the absence of looseness of the limb, and from hip disease by the absence of pain on pressure and movement and its relief by rest, and the lack of startings at night, and the less wasting of the thigh, etc. The disease, at first progressive, usually comes to a stop with a certain amount of deformity and the treatment is to restore the shape of the bone, as far as possible, by osteotomy, and to relieve the pain by rest; the latter is only palliative. The author suggests an operation which he thinks practicable, but not liable to be popular, for, if carelessly and awkwardly done, it may produce imperfect results. It consists in dividing the bone a little above the upper trochanter, then cutting—obliquely, again from the outer surface of the fragment—a portion with the muscular attachment and resetting the bone on this last surface, fastening it with pins or wires. He thinks this would be more effective than simple osteotomy, and closes with a claim to priority in the recognition of the nature of the disorder, his paper having been published prior to Müller's, in a journal which only lived a couple of years, and has therefore not been largely quoted.

Causation of Nervous Symptoms in Typhoid Fever. ALEXANDER G. R. FOULERTON and E. CAMPBELL THOMSON.—The authors say that the probabilities of finding pure typhoid toxins are likely to be confined to the early stages of the disease as later other complicating infections may occur and involve the nerves and nerve-centers. They report two cases, with post-mortems, of cerebrospinal implication in which they think that the meningeal complication was due to typhoid toxin. From studies of the cortex in these cases and the findings in the literature they do not learn of any marked changes in the ganglion cells that are characteristic. Experimental researches on the lower animals confirm this, and it appears from other observations that there is nothing to warrant the conclusion that typhoid toxin causes definite alterations in the ganglion cells of the central nervous system. This does not prove, however, that nervous symptoms are not produced by the pure toxins or that they do not act on other portions of the neuron.

Production of Local Anesthesia in Ear. ALBERT A. GRAY.—After experimenting with various vehicles Gray finds that anilin oil with rectified spirit, as a solvent for cocain, has special advantages in producing a specially beneficial effect on suppuration, causing it to diminish or cease. Anilin oil is of benefit also in rendering the drum membrane transparent. The effect on suppuration is probably due to the power of the oil in extracting the water from the tissue, which is also a quality of the rectified spirit. This method of producing local anesthesia may also be employed on other mucous surfaces. He has used it some for throat work. For the latter a 5 per cent. solution is employed; for the ear, he has used as much as 10 per cent.

Backache as a Symptom of Rectal Disorder. E. HARDING FREELAND.—The symptom of backache is usually associated with uterine disorder, but Freeland finds it by no means constant. It is frequently due to reflex irritation, having its origin in the irritation of the rectum, which, even though it is associated with symptoms referable to other pelvic organs, will not infrequently be found to be the cause. He reports several cases and in conclusion says that: 1. Backache is not only a common but a very important symptom. 2. Whether it be practically the only symptom present or whether it be associated with other more or less definite ones it is worthy of a careful and searching investigation. 3. No investigation should be considered complete until the condition of the rectum has been ascertained.

Bulletin de l'Academie de Medecine (Paris), April 3 and 10

Mortality and Disinfection. E. VALLIN.—Grancher recently pointed out, at the Academie, that isolation in measles is ineffectual, for when the disease is recognized it is already too late to prevent contagion; that disinfection is superfluous against the germ, as its virulence is extremely short-lived, but it is necessary to prevent the secondary infections, e. g., measles bronchopneumonia, etc. Vallin now brings evidence from military barracks, to show that the virulence of the germ of measles is not so transient as is asserted by city physicians, for when the disease appears in a barracks the epidemic may drag along for many months. He thinks it probable that the germs revive and thus occasion new cases and cites an instance in which the floors of some rooms in the barracks where there had been measles a year before, were torn up and the dust permeated the entire building; there had been no cases for a year, either in the barracks or in the adjoining small town, but after the floors were torn up several appeared among men who had not been away from the station for a long time. Transmission by a healthy third person is possible and frequent, but in this case no outside source for the infection could be discovered. Vallin therefore heartily approves of disinfection during measles.

Scrofula and Adenoid Vegetations. P. GALLOIS.—Gallois seeks to establish that the swelling of the ganglia in the neck is secondary to a primary lesion located in some of the air cavities of the face, usually adenoid vegetations. He considers them the chief cause of cervical adenitis, of otitis and scrofulous ophthalmia. They may also lead to cutaneous infections and osteo-articular tuberculosis. By disinfection of the air cavities of the face, numbers of children would be saved from so-called scrofulous manifestations. He does not deny the influence of the "soil," but demonstrates that this is not the only factor in scrofula.

Appendicular Pleurisy. DIEULAFOY.—In the presence of a fetid and putrid pleurisy of the right side, the possibility of an appendicitis as the origin must always be borne in mind, and by reviewing the history of the case it can usually be dis-

covered six to ten days before the phrenico-pleural stage. Dieulafoy reports several observations, and shows that the ascending infection from the appendix may reach the diaphragm and pass through it in the lymph spaces or by perforation. The fluid of the pleuritic effusion is usually turbid and fetid, but occasionally, in the rapidly recovering patients, it is clear. He still advises prompt surgical intervention in appendicitis, and in case of complicating pleurisy, the operation must be dual, attacking both the pleura and the appendix; or better still, before the appendicular infection has had time to ascend to the pleura.

Rapid Diagnosis of Rabies by Microscopic Examination of Medulla of Suspected Dog. V. BABES.—During the last nine years Babes has been making a special study of this subject, and states that out of the 487 dogs suspected of rabies which he has examined he found 35 with normal medulla, and they all proved free from the disease, as he had anticipated. Microscopic examination of the medulla is therefore one of the best means of rapid diagnosis of rabies at our disposal. The alterations noted consist in a peculiar displacement of the chromatic substance of the cell protoplasm toward the center or periphery, vacuolar degeneration, total disappearance of the chromatic elements, loss of the prolongations, modification of the nucleus until it vanishes, dilatation of the pericellular space and invasion of this space and also of the nerve-cell by embryonal elements and also by peculiar small hyaline, brownish corpuscles, partially metachromatic surrounded by a pale zone. Certain nerve-cells are surrounded by a wide zone of embryonal cells forming nodules which he calls "rabic nodules." The vessels in the medulla are always dilated, and obliterated in places by thrombi formed of leucocytes, but always containing small brown metachromatic, hyaline corpuscles, arranged in heaps, stars or crowns by free granulations and fibrin. These thrombosed vessels occasion hemorrhages. They are also surrounded by wide zones of embryonal elements which are also noted in the gray matter, where the infiltration sometimes amounts to an actual inflammation. The histologic findings are always confirmed by inoculation.

Presse Medicale (Paris), April 7, 14 and 18.

Present Conceptions of Neuron and Nerve Network. A. SICARD.—The recent attempts to dethrone the neuron theory, by Apathy and Bethe, have not succeeeded in overthrowing the results of long and careful observation on which it is founded. Apathy considers the nerve-cell and its prolongations a distinct entity enclosed in, but not in contact with, a continuous nerve network which extends uninterruptedly from the sensory periphery to the motor periphery. Bethe goes still further and asserts that the nerve-cell is independent of all the conducting nerve-fibrils, sensory or motor. They converge to a "neuropile" in the center of the ganglion, and he is still uncertain as to whether or not they connect. Sicard concludes that even if the fact is established that the elementary fibrils pass from one nerve unit into another, the neuron theory may have to be slightly modified, but it would still maintain its value and importance.

Glomerulitis. V. CORNIL.—By means of colored plates, Cornil shows the various changes in the glomerulus, whether of the capsule, of the cellular coat of the vascular loops, or of the intraglomerular connective tissue, all leading to the thickening of the walls of the capillaries and a fibrous atrophy of the glomerulus. This last lesion entails the absolute functional loss of the glomerulus, which is transformed into a small fibrous nodule. This fibrous atrophy is very common in the superficial portions of the kidney and under the capsule, in subacute and chronic nephritis. In the latter a calcareous degeneration may occur or a cystic dilation or amyloid degeneration. The glomerulitis may be due to the invasion of bacteria, obstructing the lumen of the capillaries until an abscess is formed.

Painful Polymorphous Dermatitis. L. BROCQ.—Corlett described an observation of this affection, at the meeting of the American Dermatological Association in 1898. Another was described in France in 1896, and Brocq now presents the third. He proposes the above name for the group of symptoms including pains of variable intensity, usually intense and out of all proportion to the extent of the eruptive phenomena, which are polymorphous, erythematous-vesiculous, bullous, urticarial, papulous or pustulous, sometimes herpetiform, more often grouped, but also disseminated. There is a marked tendency to progress by successive "pushes." The general health seems very little affected. In the observation described and illustrated, the eruptive process was limited to each side of the face, extending from the neck in a strip over the forehead, with remarkable production of cicatrices and epidermic cysts in the affected regions, on which it recurred again and again and to which it remained limited, causing absolute alopecia. The patient was a man of 71, otherwise in good health. The affection had commenced a year and a half before, after a severe mental strain.

Cure of Harelip. E. JUVARA.—Severeaunou has been much pleased with the results of his method of operating on harelip. No tissue is wasted; the needed raw surfaces are obtained by blunt dissection of the mucous membrane layer of the lip from the cutaneomuscular in front. Each layer is then sutured, the inner over and over, brought up to form the lip, and the cutaneomuscular flap with a special zigzag suture. The needle is inserted from side to side and follows a zizag path through the tissues; each time it emerges on the skin it is reinserted in the same hole, but slanting at quite an angle from its path to the hole. Drawing the thread with a knot at the end, the lips of the wound are coaptated with no dead space, and no signs of the thread except the two knotted ends and a row of tiny holes on each side of the wound, located alternately. If there is a considerable defect to be filled a small flap can be taken from the thickness of the lip with its base toward the exterior. He usually prefers general narcosis but cocain will answer; and he has even removed a small cancer from the lip in this way, concluding the operation as above.

Prolapsus of Rectum. G. MARCHANT.—The rectovesical peritoneal pouch descends almost to the perineum in the embryo, and later frequently contains loops of intestines. If from any cause, such as relaxation of the rectal wall at this point, repeated efforts at defecation, possibly some congenital malformation of this pouch, the rectal wall yields, the intestine in the pouch will invaginate into the rectum, forming a primary perineal hernia into the rectum. This hernial sac drags the loosely fastened side and rear walls down with it, and the prolapsus of the rectum is complete. This is the explanation of the etiology of prolapsus as advanced by Ludlow last year and endorsed by Marchant. The question arises whether or not this hernial sac can not be operated on and the prolapsus be cured. The best method of treatment is not the usual resection with its frequent relapses, dangers of infection, etc., but recto-coccypexy, suspending the rectal ampulla from a stable support, the stitches taken well around on the lateral as well as in the rear wall.

Pains in the Side in Habitual Drinkers. G. MILIAN.—Hepatalgia, epigastralgia or intercostal neuralgia, simulating an acute pulmonary affection, are frequently the first symptoms to call the attention of the habitual drinker to his chronic intoxication. Local revulsion, purgatives, opium and diuretics are the means to be employed in treatment, "with a moral purgation of the patient."

Revue de Chirurgie (Paris), April.

Epithelioma of Both Nipples with Secondary Dermic Nodules. A. LE DENTU.—This puzzling case was complicated with tuberculous peritonitis, but no tuberculous lesions were found in the breasts. The patient was a young woman in poor circumstances and, aside from menstrual troubles and syphilis, had never been ill. Suddenly both breasts became enormously tumefied, with acute total mastitis, followed by a stage in which the lesions assumed a nodular aspect, with the simultaneous appearance of ascitic peritonitis. Then ensued a phase of absorption and apparent recovery from the abdominal lesion after laparotomy, followed by a fourth and last phase in the cutaneous neoplastic invasion. Each breast was the seat of a cylindric epithelioma. The mammary affection subsided to a torpid course at last, and death was due to the progress of

the peritonitis, sixteen months after first indications of the mammary affection.

Total Ablation of Scapula with Retention of Member. L. PICQUE and DARTIGUES.—A myeloid sarcoma in the scapula necessitated the total removal of the bone. The cuts of the patient, a robust young woman, taken a year after operation, showed that with the exception of the lowering of the shoulder, the results had been absolutely satisfactory. A simple brace devised by Picqué restored the shoulder nearly to normal position, and the patient pursues her occupations without inconvenience, and is stronger than before. The partial and total operations of the kind on record are reviewed in tabulated form, including three by Americans at an early day: 34 total; 27 partial, and 6 with resection of the head of the humerus. The mortality was 18 per cent. Recurrence was noted in 7 of the 34 total ablations, but 13 were eminently satisfactory in the ultimate results. Statistics are defective in regard to recurrence in regard to most of the rest. Picqué explains and illustrates the various steps of the operation, opening the capsule of the joint and luxating the head of the humerus, resecting the outer third of the clavicle and severing, as the final step, the last muscles holding the scapula and twisting it around its spinal end as on a hinge, concluding with fixation of the head of the humerus slightly backward, careful hemostasis and drainage.

Uterine Fibroma with Multiple Pedicles. F. TERRIER and E. REYMOND.—Investigation through the cervix, in a case of fibroma described, might easily have led to error, as the fibroma seemed small and the pedicle near the orifice could be readily distinguished. But in reality the neoplasm was extensive and the true pedicle was in the roof of the fundus where it would have been impossible to reach it by vaginal operation. There were two other so-called pedicles, but the writers establish that they were merely secondary adhesions, as the fibrous polyp in its growth came in contact with a portion of the uterine wall and pressed against it, thus forming a depression in which it rested, with loss of epithelium on both the surface of the uterine wall and the polyp, entailing ulceration. As the lobe of the polyp was imprisoned in the ulcerated cul-de-sac, the muscular tissue of the uterus became continuous with that of the tumor, forming a solid secondary pedicle without interposition of cicatricial tissue, and with blood circulating through it. Cysts were noted in the fibroma, but not in the central portion nor in the primary pedicle. An explanation advanced, based on the histologic characters of the cysts, especially their cylindric epithelium lining, is that while the mucous surfaces of the uterine wall and the encroaching lobe of the tumor were in contact and became continuous, the lower end of the cul-de-sac or pocket thus formed still persisted and became surrounded by the growth of the pedicle, remaining as a closed cavity which increased in size and became a cyst visible to the naked eye.

Anterior Opening for Certain Resections of Hip-Joint. ROCHET.—Comparing the ultimate results in patients operated on directly from the front with those in which the joint was reached more from the rear, Rochet finds that ankylosis in a good position is attained more rapidly and more easily by the former than by the latter method. The dressings are much more easily applied, both for the patient and the attendant, and chances of secondary infection from the anal region are much less.

Pathologic Anatomy of Cancer of Stomach. B. CUNEO.—This author's experience renders his statements worthy of attention. He confirms the infrequency of invasion of the duodenum in case of cancer of the pylorus, and merely considers the first centimeter suspicious, as a rule, recommending resection of 2 cm. as the minimum. The propagation of the neoplasm in the submucosa, beyond the limits apparent in the mucosa, is now fully established, also the invasion of the para-stomachal ganglia, which should be removed in one mass with the tumor, the incision extending as close to the cardia as possible. He suggests that the resection would be much facilitated by preliminary ligature and division of the stem of the coronary near the main fork, and also ligature of the gastroduodenal at its origin.

Centralblatt f. Chirurgie (Leipsic), April 21.

Route to Gasserian Ganglion. F. KRAUSE.—Supplementing his former communications on the subject, Krause observes that the difficulties of the operation for resection of the Gaserian ganglion first begin with the exposure of the third branch inside the skull. From this point onward it is necessary to have the most complete supervision of the field of operation, and this can be accomplished only by elevating the temporal lobe of the brain in its dural envelope, as otherwise the field is in darkness, and complete extirpation would be impossible. Partial extirpation and the use of the sharp curette should both be rejected. But the brain should be retracted as little as possible, and, to avoid it, the side wall of the skull should be removed down to the crista infratemporalis. It is altogether unnecessary to resect the zygomatic arch. He has tested all the methods proposed on the cadaver, but has found none that allows such ample access as his own. He has made a thorough resection of the trigeminus on twenty-two patients, and states that his method of ligating the middle meningeal artery is so reliable that he can recommend it as a typical operation. He has done it three times so far in cases of hemorrhage, with complete success. He adds that experiments on the cadaver are not equivalent to those on the living subject, as there is no venous hemorrhage from the dural veins, which in isolated cases has immeasurably enhanced the difficulties of the operation, and is much more embarrassing with a narrow opening than with ample oversight of the field. His improved technique in cutting the bone flap consists in drilling a hole at each of the upper corners of the outlined, uterus-shaped flap, after two small incisions through the skin. A Gigli saw is introduced through these holes, and the upper edge of the flap sawed through from within outward, leaving the skin untouched for a time. The two side edges of the flap are then cut with a knife, a little at a time to prevent hemorrhage, and the bone by Dahlgreen's forceps, as far down as possible. The skin-bridge across the top is then divided and the bone lifted and turned over, breaking the bottom edge of the flap across; the jagged edge always corresponds to the thinnest part of the squamous portion of the temporal bone, about 1 cm. above the zygomatic arch. It is indispensable now, to chisel away the rest of the bone down to the crista infratemporalis, after blunt dissection of the periosteum from the large sphenoidal wing and squamous portion of the temporal bone. Without resecting the zygomatic arch therefore, the flap, hanging by skin, temporal muscle and periosteum, can be turned down over the malar bone and free access to the middle cranial fossa thus be obtained.

Deutsche Medicinische Wochenschrift (Leipsic), April 10.

Reproduction of Bacteria. FEINBERG.—With the Romanowski stain, slightly modified, Feinberg has succeeded in establishing the existence of a nucleus in certain bacteria, and now announces that he has traced a series of phenomena in diphtheria, tubercle, typhus and other bacteria, which can only be interpreted as the whole process of direct cell division from the first constriction in the nucleus to the complete division into daughter nuclei by amitosis. It is best observed in the diphtheria bacillus, in which nucleus does not so completely fill the cell as it does in some of the others.

Finding Acid-Proof Bacteria Resembling Tubercle Bacillus in Gangrene of Lungs. LYDIA RABINOWITSCH.—Several writers have reported finding "pseudo-tubercle bacilli," so-called smegma bacilli, in gangrene of the lungs, but none have succeeded in cultivating it from the sputum. This has been accomplished by the writer, from the sputa and the gangrenous focus of a patient with fetid chronic bronchitis and suspected cavity, but no indications of tuberculosis during life nor at the necropsy. The bacteria proved acid-proof and formed on glycerin-agar, in twenty-four to forty-eight hours, grayish-white, shiny, pinhead sized colonies that gradually spread into a wihtish, creamy film. The film lost its shine as it grew older, and became wrinkled, yellow and finally orange-colored. On bouillon there was an indol reaction and disagreeable odor. Guinea-pigs were not affected by inoculations, but mice succumbed in about ten days and the bacilli were found in their blood and organs. The bacilli also proved

pathogenic for guinea-pigs when injected with sterile butter. In this case they produced the same lesions as those already described by the writer, caused by acid-proof bacteria isolated from butter. All the so-called acid-proof bacteria are distinguished from the tubercle bacilli by their pathogenic properties and their cultures. But they respond alike to stains to acids and alcohol, probably chiefly on account of the larger amount of fat they contain. The writer believes that the bacterium isolated in this experience is identical with those found in sputa and which are described by Zahn, Fraenkel, and Pappenheim.

Case of Isolated Paralysis of Nervus Suprascapularis. A. HOFMANN.—Traumatism preceded nearly all of the few cases on record, the rest were consecutive to neuritis of the plexus brachialis. The main symptom is the tray-shaped depression of the infraspinous fossa in consequence of the atrophy of the musculus infraspinatus, and the weakness and effort necessary to rotate the arm outward, or raise it vertically.

Case of Multiple Melanosarcomata with Peculiar Complications in Both Eyes. A. WAGENMANN.—A young man noticed small pigmented tumors on the breast and face, and one developed in the left eye, but was afterward completely absorbed. Another developed later, leaving a layer of lumps of pigment over the cornea. The right eye also became affected with a metastasic process, resembling synchysis scintillans, only the glistening points in the latter were in this case the floating, brown dots of pigment, and the membrane a compact yellow mass.

Acidophile Bacilli in Infants' Feces. H. FINKELSTEIN.—Particles of the feces sowed on .5 to 1 per cent. acetic acid bouillon, to which 2 per cent. grape-sugar had been added, showed that there are at least two and probably four different varieties of acidophile bacteria in the intestine of healthy infants. Finkelstein announces that in certain pathologic cases there is such an increase in the numbers of these acidophile, Gram-staining bacteria that they can be considered a pure culture. They sometimes resemble those found in sound intestines and again show such a difference in their cultures that a specific difference can scarcely be doubted. They are sometimes thread-like, sometimes like streptococci, sometimes slender, curved, short threads. The morbid conditions in which the last-named shapes were noted, were distinguished by infectiousness, remarkable resistance to dietetic therapy and by the preponderance of severe nervous disturbances in the syndrome. They did not prove pathogenic for the usual laboratory animals, but young goats died regularly two to three weeks after ingestion of 10 gm. of fluid feces containing bacilli from severely sick children. The animals became extremely emaciated and temperature was subnormal, but neither clinical nor anatomic alterations could be discovered. The same amount of a pure milk culture, three days old, from a fatal case, caused death in three weeks with the same symptoms, while a like amount of normal fecal matter produced only slight and transient disturbance.

Silver Wire Treatment of Prolapsus Recti. URBAN.—Several years' experience has confirmed the absolute harmlessness and efficacy of Urban's method of preventing prolapsus of the rectum. It consists in merely narrowing the orifice so that the prolapse can not occur. A silver wire is run around the rectal walls 1 cm. above the anus, and the needle inserted back in the stitch hole from which it emerges each time. The wire is drawn up and fastened, closing the lumen until the orifice will admit nothing larger than the forefinger in an adult and the little finger in a child. The wire has been usually removed after two or three months, but he is now leaving it permanently since it heals into the tissues without disturbance of any kind. All the troubles of the prolapsus vanish at once after the insertion of the wire.

Muenchener Medicinische Wochenschrift, April 17.

Diagnosis of Pulmonary Lesions Caused by Inhalation of Dust in Industrial Establishments. BAEUMLER.—Percussion sometimes shows that the upper part of the anterior margins of one or both lungs is very much retracted, and this retraction is evidence of induration and contractions in the lung tissue. Baeumler has noted it in a large number of cases, and in nearly all he could demonstrate lesions due to the inhalation of foreign particles in the dust from industrial establishments. These inhalations cause frequent bronchial catarrh, recurring at progressively shorter intervals, emphysema of the lungs, bronchopneumonia and inflammation, with participation of the interstitial tissue later and termination in the formation of indurations and contractions. Bronchiectasis is frequently the result of the bronchopneumonic processes and atelectasis in the lower lobes, but more or less extensive indurations and shriveling predominate at the apices. Tuberculosis may make its appearance sooner or later, but the alterations it finds are nearly identical with its own healing processes, and its course is liable to be much more favorable than in persons without these dust lesions. Changing to another occupation may rapidly cure persons who have for years presented evidences of serious but non-tuberculous pulmonary processes, but the remains of the former inflammatory lesions persist, and in case of a fresh catarrh or acute bronchopneumonia, may deceive the physician into the belief that he has an advanced case of tuberculosis. It is therefore of great importance in both differentiation and prognosis to determine the significance of the alterations noted. The shortening of one or both of the apices indicates shriveling, but the retraction of the anterior margins of one or both of the lungs along the upper portion is an almost infallible sign of indurations and shriveling. In an observation described and illustrated, the margins are so retracted that the anterior mediastinum is not covered by the lungs in any portion.

Improved Sediment Method for Microscopic Study of Bacteria, Especially of Tubercle Bacilli in Feces. J. STRASBURGER.—An abundant sediment can be obtained from urine or diluted feces containing bacteria, by reducing the specific gravity. This allows the bacteria to settle to the bottom by centrifugalization, while in fluids with the specific gravity of water, the bacteria remain indefinitely in suspension. Strasburger finds the specific gravity can be best reduced by diluting one part of the fluid with two parts of 96 per cent. alcohol. The bacteria will be found in the sediment with half a minute's centrifugalization. The flakes of albumin coagulated by the action of the alcohol assist in the rapid sedimentation of the bacteria. A peculiar advantage of this method is that preparations made by the sediment dry much more rapidly than usual, on account of the alcohol. Even without a centrifugalizer, sedimentation occurs in one-half hour, but would require a whole day without the alcohol. This sediment process is especially instructive in case of suspected tuberculous lesions in the intestines, and will afford information in regard to the presence of tubercle bacilli in apparently normal feces, not obtainable in any other manner.

Zeitschrift f. Orthopedische Chirurgie (Stuttgart), vii, 22.

Congenital Luxations of Knee-Joint. G. DREHMANN.—To determine the relations between congenital luxation of the knee-joint and congenital genu recurvatum, which have been frequently confounded by various later writers, Drehmann describes five personal cases and reviews all he could find in the literature of both malformations—127 in all. He restricts the term genu recurvatum to an abnormally excessive extension movement, with otherwise normal flexion, without backward displacement of the condyle of the femur. True luxation consists in the dislocation of the condyle of the femur toward the rear, or a luxation of the tibia on the articulating surfaces of the patella. Later, as the child develops, the more advanced stages of the dislocation are reached, as occurs with congenital luxation of the hip-joint, which is much more frequent, and in which several stages can be distinguished. The slight displacement at birth gradually becomes more and more pronounced forward and upward. Not until later, when weight comes upon it, is the backward luxation observed. We are justified in assuming that at birth there is merely a subluxation in many cases. Another point in which it resembles luxation of the hip-joint is the frequent association of other malformations allied to it. Coxa vara usually occurs with luxation of the hip, and genu valgum frequently with luxation of the knee. In the cases reviewed in which the sex was men-

tioned there were 46 females to 29 males and 1 hermaphrodite. In 54 cases of forward dislocation it was restricted to one side; and in 48 it was bilateral; in 6 it was "voluntary luxation;" in 6, unilateral backward; in 3, unilateral outward; in 5, bilateral backward; and in 3, bilateral mixed (backward and forward). The etiology is possibly that in the differentiation of the joints, the knee does not become flexed, or else it gets into extension at a time when the upper portion of the limb is much larger than the lower and thus the lower portion has freer swing. If this occurs before the muscles are completely formed—which we are justified in assuming from the conduct of the patella—the leg can remain a long while in this abnormal position. The foot gets caught by the chin or in the axilla, and notwithstanding the presence of plenty of fluid, is prevented from returning to a flexed position as it has grown in length during the interval. Genu recurvatum first occurs, then pes calcaneus and then the joint surfaces slide apart. The hip or the knee joint may be affected or both together. Prognosis is more favorable for the knee than the hip, which is a much looser articulation. The results of treatment are better, the earlier it is commenced. Reposition—with narcosis for older children—is only complete when the condyle of the femur is no longer to be felt in the popliteal space and the lower portion of the leg remains flexed during narcosis; for after-treatment a circular plaster cast holding the knee at a right angle or in moderate flexion for younger children; operative treatment for older persons or rebellious cases.

Recent Progress in Treatment of Scoliosis. A. HOFFA.—In this profusely illustrated communication Hoffa describes his success in mobilizing the rigid scoliotic spinal column with suitable apparatus; the general and special gymnastic exercises by which he stimulates and restores strength to the muscles of the back, until the patient can voluntarily assume the normal position, and the apparatus which he uses to hold the spine in this normal or overcorrected position. The latter consists of an iron pad covered with leather, which is applied to the prominence on the spine and held by a leather strap over the shoulder, and a stout iron rod which screws up and down in a threefold slide at the base of the spine, modifying its position in three different directions. The slide is fastened immovably in a long corset which embraces the pelvis. The firm support afforded by this is the chief feature in the apparatus. The pressure of the pad is as much like that of the hand as possible.

Progres Medical (Paris), March 31 and April 7.

Tuberculosis of the Eye. A. PECHIN.—The arguments in favor of enucleation as the treatment of supposed primary tuberculosis of the eye are refuted by the extreme rarity of this form of tuberculosis as a primary affection. Pechin advocates very conservative measures. Even a "fungous" degeneration, with the cornea quite destroyed, has been known to heal spontaneously. Iridectomy in case of a solitary tubercle may save the eyesight, as in a few cases on record, in which there was good retention of light vision. With disseminated tuberculosis of the iris there should be no intervention, as the traumatism might develop acute accidents, while there is always a possibility of spontaneous absorption.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, N. J., June 5-8.

Arkansas Medical Society, Jonesboro, May 14-16.

Illinois State Medical Society, Springfield, May 15-17.

Medical Association of State of Missouri, Mexico, May 15-17.

Medical Association of Montana, Butte, May 16.

Iowa State Medical Society, Des Moines, May 16-18.

American Medico-Psychological Association, Richmond, Va., May 22-25.

Connecticut State Medical Society, New Haven, May 23-24.

North Dakota State Medical Society, Grand Forks, May 23-24.

Indiana State Medical Society, Anderson, May 24-25.

Association of Military Surgeons of the United States, New York City, May 31 to June 2.

American Laryngological, Rhinological and Otological Society, Philadelphia, May 31, June 1 and 2.

New Hampshire Medical Society, Concord, May 31 and June 1.

International Association of Railway Surgeons, Detroit, Mich., May 30 to June 1.

Baltimore & Ohio Association of Railway Surgeons, Atlantic City, N. J., June 1-2.

Conf. of State and Prov. Bds. of Health of N. A., Atlantic City, N. J., June 1-2.

American Academy of Medicine, Atlantic City, N. J., June 4.

American Medical Publishers' Association, Atlantic City, N. J., June 4.

Association of American Medical Colleges, Washington, D.C., June 4.

American Medical Editors' Association, Atlantic City, N. J., June 4.

Medical Society of New Jersey, Atlantic City, N. J., June 4.

New Mexico Medical Society, Santa Fe, June 5.

American Association of Acting Assistant-Surgeons, U. S. Army, Atlantic City, N. J., June 6.

Rhode Island Medical Society, Providence, June 7.

Medical Association of Delaware, Rehoboth, June 12.

Massachusetts Medical Society, Boston, June 12-13.

American Association of Military Surgeons of the U. S., New York City, June 12-14.

Oregon State Medical Society, Portland, June 12-14.

Colorado State Medical Society, Denver, June 13.

Maine Medical Association, Portland, June 13-15.

South Dakota State Medical Society, Aberdeen, June 14.

Indian Territory Medical Association, Wagoner, June 19-20.

Wisconsin State Medical Society, Milwaukee, June 20.

Worcester North District Medical Society.—This Society's forty-second annual meeting was held in Fitchburg, Mass., April 24. C. H. Bailey was elected president for the coming year.

Greene County Medical Association.—This body met in Waynesburg, Pa., April 24, and elected officers: president, Ira D. Knotts, Davistown; vice-president, T. N. Milliken, Waynesburg.

Bucks County Medical Society.—At the spring meeting, held May 2, the following officers were elected: president, A. S. Wilson, Bristol; secretary, A. F. Myers, Blooming Glen. Prof. John Da Costa, of the Jefferson Medical College, Philadelphia, made the address.

Brainard District Medical Society.—The annual meeting of this Society was held in Springfield, Ill., April 26, and the following officers were chosen for the ensuing year: president, J. L. Lourie, Lincoln; vice-president, S. F. Hurst, Greenview; secretary, Katherine Miller, Lincoln.

Ophthalmological and Otological Society.—At the annual meting of this Society, held recently in Washington, D. C., the following officers were elected: president, S. O. Richey; vice-president, secretary and treasurer, Anton Coe, vice W. K. Butler, who resigned, having filled that office for the past four years.

Hunterdon County Medical Society.—The annual meeting was held in Flemington, N. J., April 24, and the following officers elected: president, E. H. Moore, White House; first vice-president, Geo. W. Barton, Three Bridges; second vice-president, H. Ward Servis, Junction; treasurer, I. S. Cramer, Flemington; secretary, O. H. Sproul, Flemington.

Suffolk District Medical Society.—The fiftieth anniversary of this Society was observed April 28, in Boston. The programme contained a history of its organization, sketches of some of its members and speeches by a few who had been with the Society since its inception. The officers elected were: president, H. L. Burrill; vice-president T. M. Rotch; secretary, H. A. Lathrop; treasurer, W. H. Prescott.

Susquehanna County Medical Society.—The fifty-second annual meeting of this Society was held in Wilkesbarre, May 3. The following officers were elected: president, R. M. Stratton, Scranton; vice-president, B. M. Crary, Wilkesbarre; recording secretary, T. W. Thomas, Wilkesbarre; treasurer, J. C. Mertz, Easton. The next meeting will be held in Williamsport.

Hudson County Medical Society.—The annual meeting of this New Jersey organization was held May 1 in Jersey City. Following are the newly elected officers: president, John Parsons; secretary, C. J. Purdy; treasurer, Henry C. Brinkerhoff. It was decided to hold two meetings a year hereafter instead of one, as has been the custom.

American Therapeutic Society.—In pursuance with a call issued by the Therapeutic Society of the District of Columbia, a meeting was held in Washington, May 1, and the organization of the American Therapeutic Society effected. It will become affiliated with the Congress of American Physicians and Surgeons, and will meet annually, next year in Washington, D. C., on May 7. The officers are: president, Horatio C. Wood, Philadelphia; first vice-president, Howard H. Barker, Washington; second vice-president, R. W. Wilcox, New York City; third vice-president, E. H. Long, Buffalo, N. Y.; secretary, Noble P. Barnes, Washington; recorder, William M. Sprigg, Washington; treasurer, John S. McLain, Washington.

Pan-American Medical Congress.—The International Executive Committee of the Pan-American Medical Congress, consisting of Drs. Albert Van Dervere, Albany, N. Y.; Chas. A. L. Reed, Cincinnati, Ohio, and H. L. E. Johnson, Washington, D. C., met in executive session at Buffalo, N. Y., April 27, to determine the place of meeting of the third Pan-American Medical Congress. The Congress should have been held in Caracas, Venzuela, but owing to the uncertain conditions, growing out of the military operations in that country, the executive committee was requested by the medical president to hold the meeting elsewhere. The committee was unable to decide just where the Congress should meet, owing to the urgent requests from several countries, so has taken the matter under advisement, and will report on the date and location later.

Congress of American Physicians and Surgeons.

Fifth Triennial Session, Washington, D. C., May 1, 2, and 3, 1900.

The President of the Congress, Dr. Henry P. Bowditch, of Boston, in the chair.

The Congress voted on a proposition for the appointment of a committee of three with full power to draw up and execute a memorial to the Congress of the United States, asking that charitable, religious, and educational institutions be relieved from such provisions of the war revenue act of 1898 as imposed taxes on the legacies left to such institutions, and to take such other action as may, in their discretion, seem desirable in securing such relief.

ADAPTATION OF PATHOGENIC BACTERIA.

PROF. THEOBALD SMITH, Boston, presented the first paper, in which he spoke of the adaptation of pathogenic bacteria to different species of animals, and discussed at length the diseases incident to, and the infectious diseases which human beings share with, animal life. He said that medical science and medical art are concerned chiefly with the phenomena of human disease. All that medical science desires to know is the series of causes antecedent leading to any given disease. Medical art wishes to know where human ingenuity may enter to modify, suppress, or eliminate portions of this series, to interfere with the progress of the disease and bring it to a standstill. By common consent, hygiene devotes itself to external phenomena; pathology to the internal. Professor Smith contended that to learn the simplest facts recourse to animal experiments has been necessary. Experiments on human subjects are not only not permissible, but as a rule sterile of results under conditions necessarily imposed. He gave a technical description of experiments made on many of the lower animals and demonstrated their value to science.

DR. SAMUEL J. SMELTZER, New York City, followed with a paper in which he dwelt on the physiologic resources of the body in its defense against bacteria and their toxic products; while Prof. Harold C. Ernst, of Boston, spoke in a technical manner of flagella and serum reactions.

BACTERIOLOGY AND CLINICAL MEDICINE.

DR. RICHARD C. CABOT, Boston, discussed the relations of bacteriology to clinical medicine. He classified the diseases whose etiology is known, such as diphtheria, anthrax, Asiatic cholera, tuberculosis, bubonic plague, gonorrhea, glanders, tetanus, relapsing fever, influenza, erysipelas, typhoid fever, epidemic cerebrospinal meningitis, croupous pneumonia, etc. He then considered diseases whose etiology is probable, but not definitely known, and among these he mentioned meat poisoning, leprosy, epidemic and tropical dysentery, and referred to diseases whose etiology is shrouded more or less in darkness, such as whooping-cough, yellow fever, etc.

He advised examination of the sputum for the influenza bacillus, for the pneumococcus, and in tropical countries the sputum should be examined for the possible presence of the bacillus of plague. Examination of the cerebrospinal fluid enables the physician to identify the bacillus of epidemic cerebrospinal meningitis—the diplococcus intracellularis of Weichselbaum. The pneumococcus can be identified, as well as the tubercle bacillus, in the same fluid. Examining the urine for typhoid bacilli should have a wider range of use than it previously has had. That too, of the nasal discharge, sometimes influences the prognosis.

As to the use of serum reactions, he regards the Widal as established, also the tuberculin reaction, which has taken a firm hold on the profession; it can be carried out without danger, if the proper precautions are taken. The mallein reaction is also well established.

As to pneumonia, it is now known that no one organism is responsible for this disease, but that the affection is produced by many different ones, as can be clearly demonstrated by the appearances and conditions found post-mortem. One organism may cause many diseases; for instance, the tubercle bacillus acts on the brain, bone, peritoneum, etc. The finding of the influenza bacillus in coryza influences the prognosis of that disease. The finding of pneumococci in cases of empyema likewise markedly influences the prognosis of that.

BACTERIO-THERAPEUTICS WITH ESPECIAL REFERENCE TO TUBERCULOSIS.

DR. EDWARD R. BALDWIN, Saranac, N. Y., followed with a paper on this subject.

He briefly considered the various uses of bacteria and serums in the prevention and treatment of disease, with a more detailed account of those in tuberculosis.

Living bacteria are little used, except in vaccination for variola and anthrax. Dead cholera, plague and typhoid bacilli are useful in prevention, but irrational in treatment.

Diphtheria and tetanus are as yet the only conspicuously antitoxic serums of practical value. Streptococcus, pneumococcus, cholera, typhoid, plague and recurrent fever serums are either bactericidal or bacteriolytic, and of greater value in immunization than treatment.

There are many extracts of tubercle bacilli under the general name of tuberculin, which the author enumerated and described. No permanent immunity is produced by any of them, though the new tuberculins have some immunizing power in animals. The method is not applicable in man, nor safe, as it is likely to produce chronic poisoning, even in healthy subjects. Research at present aims to discover and utilize the mechanism of relative immunity produced by injections of bacillus substance.

The nature of the tuberculin reaction is of importance. Of the various theories promulgated, that which assumes a ferment action chiefly produced by secretions from the leucocytes, is most in line with present knowledge. Many bacterial extracts, nucleins and digestive albumoses excite some such reaction as tuberculin produces.

Tuberculin used therapeutically has only a limited application, and as it does not immunize for any length of time, may not be better than other substances that can produce local

hyperemia. The production of local hyperemia as a therapeutic measure is rational in lupus, tuberculous peritonitis and to a limited extent in pulmonary tuberculosis.

Serums are not yet successful as to antitoxic properties. They may be bacteriolytic or bactericidal. The profession must still hope for some efficient serum or extract of tissues, though possibly not antitoxic.

ETIOLOGY OF MALARIA.

DR. WILLIAM S. THAYER, Baltimore, Md., discussed the etiology of malarial fevers, and spoke of mosquitoes as causative factors in this affection. Inoculation experiments have shown that through the bites of these insects some type of the disease can be transmitted from one individual to another.

BACTERIOLOGY OF DYSENTERY.

PROF. SIMON FLEXNER, Philadelphia, talked on this subject and presented a summary and the results of his investigations in the Philippine Islands. He said that three sets of organisms have been described by different observers, as the cause of dysentery, namely, pathogenic cocci, bacilli, and protozoa, but the specific organism has not as yet been discovered. Evidence to show that the bacillus coli commune is the cause is wanting in many particulars. The ameba coli, on the other hand, has much more evidence in its favor as a cause of dysentery, and this the speaker dwelt on at considerable length, narrating experiments, etc. A large number of observations tend to show that in the tropics the protozoa which have been found, and are said to be the cause of dysentery by some, can not be distinguished morphologically from the ameba coli which is present in the normal intestine. During a residence of three months in Manila, he had an opportunity of studying this disease among the American soldiers. He found two forms, a very acute one, which was rapidly fatal, and the chronic. The acute was unassociated with the presence of ameba coli; while the chronic showed the amebæ with greater regularity.

SOCIOLOGIC STATUS OF THE PHYSICIAN.

DR. CLARENCE J. BLAKE, Boston, discussed the sociologic status of the physician. Sociology was defined as the science of the laws of human relationships. Among other things, the Doctor said that people turn to the practitioner of medicine for advice and counsel because of his broad knowledge and thorough study of human nature and the relation of one individual to another. The education necessary to fit one for the practice of medicine is more exacting, and requires more intense and closer application than the corresponding courses which lead to a degree in law or divinity. The possession of a knowledge of human life and intimate relationships implies great responsibility.

Attention was directed to the admittance of women into hospital life, and to training schools for nurses. Since the advent of the trained nurse better service has been rendered to both the physician and patient; besides the general beneficial effect exerted on the morale of the latter.

EVOLUTION OF THE PHYSICIAN.

DR. S. WEIR MITCHELL, Philadelphia, recited a poem on the evolution of the physician. It elicited considerable applause throughout its delivery.

THE MEDICAL SCHOOL OF THE FUTURE.

PROF. HENRY P. BOWDITCH, the President of the Congress, delivered an address on this subject. He said that among the intellectual movements that have characterized the century now drawing to a close, there is perhaps none more deserving of careful study than that which is concerned with providing education for the people in the school, the academy, and the university. The importance of popular education becomes apparent in proportion as political freedom is secured for the people. For many years educators looked on their work with no little complacency. The educational systems of the various civilized countries were supposed to be well adapted to the ends in view. Education has not always been found to furnish the required safeguards for order and liberty, and highly educated men have been found singularly lacking in mental balance. Schools for the inculcation of common-sense have never yet been established. The great danger which threatens the system of popular education in America is its too close association with party politics. The office of school committeeman in one of our large cities has been well described as "the smallest coin in which the politicians pay their debt," and as long as the education of children continues to be entrusted largely to men who consider their positions to be the lowest step of the political ladder, there is small hope of the adoption of rational methods of education.

Professor Bowditch pointed out many of the evils of the modern system of education, paying particular attention to medical colleges, and showing how he believes the faults or defects will be remedied in the future. He thinks the medical school of the future should be connected with some university, but entirely independent of university control outside of questions relating to methods of personal teaching. Such a school will afford advanced instruction in every department. Laboratory instruction will be greatly extended and students trained to get knowledge, as far as possible, by direct object study. The didactic lecture, though it will not occupy as conspicuous a place as it has heretofore, will not by any means be displaced as an educational agency. The work of students will be so arranged that their attention shall be concentrated on one particular subject at a time, and subjects will follow each other in natural order.

Chicago Medical Society and Chicago Medical Examiners' Association.

Joint Meeting, April 11, 1900.

DISEASES OF THROAT AND NOSE IN RELATION TO LIFE EXPECTANCY.

DR. WILLIAM E. CASSELBERRY read a paper on this subject. Diseases of the throat and nose have not as yet been accorded a position of any great prominence with reference to life expectancy. Many of the simpler affections, important as they are from the standpoint of the patient's comfort, show but little tendency to abbreviate existence; yet there are other and graver conditions often confused with the simpler affections, lightly passed over, or wholly unrecognized by the casual observer, which do exert a decided influence on one's expected term of years. Simple, hypertrophic, and atrophic rhinitis, when uncomplicated, have little or no influence on life expectancy, unless the case be of extraordinary severity, or occurring in one of otherwise debilitated constitution. But these unimportant catarrhal affections are liable to be confounded with more serious nasal diseases which are prone to shorten the duration of life and which the examiner therefore should seek to discover. Prominent among these the author mentioned chronic suppuration of the antrum of Highmore, or of the frontal and ethmoid sinuses.

Nasal obstruction commonly indicates only hypertrophic rhinitis or septal deformity, widespread affections which, unless extreme, may be disregarded from the standpoint of life expectancy.

The significance of nasal polypus with reference to life insurance varies with the individual case. If single or small and with little disposition to recurrence after removal, it may add but a trifling risk, but when multiple or large and persistently recurrent, a conservative custom would be to exact a thorough removal of polypi, as a condition preliminary to acceptance. Polypi are a frequent accompaniment and probably at different times both a cause and an effect of sinus empyema, so much so that to the rhinologist their presence is instantly suggestive of a possible chronic suppuration in one or more of the accessory sinuses of the nose.

Another symptom of nasal disease of which the examiner should take cognizance is fetor. When pronounced, it is common both to the ozenal type of atrophic rhinitis and to the gummatous ulcerative or necrosing stage of nasal syphilis.

Tuberculosis of the larynx is almost invariably secondary to pulmonary tuberculosis. The primary lung disease, however, may be so slight as to escape notice in some cases; hence the importance of bearing in mind the possibility of laryngeal tuberculosis as a rapidly fatal and sometimes early complication.

Impairment of the voice is an important symptom with reference to life expectancy, one which should be the subject of minute inquiry on the part of the examiner, eliciting informa-

tion concerning its cause, mode of onset, duration, variation, disposition to recurrence, etc., and which, if not thus satisfactorily accounted for, should suggest a careful laryngoscopic examination.

DR. E. F. INGALS sent a short paper in which he estimated that less than 3 per cent. of all persons examined for life insurance are subjected to any examination of the upper air-passages. It is not believed that the insurance companies lose anything in a large percentage of the cases supposed to be normal. There is no question, however, among those who have to do with diseases of the upper air-passages that they have an important relation to various other affections which materially influence life expectancy. Sharp deflections of the nasal septum would influence the opinion of the examiner, for the reason that such deflected septa may produce epilepsy.

DR. HOMER M. THOMAS classified a list of diseases into those which are of the acute and chronic type; those which are malignant and non-malignant, and those which are irrelevant as to life expectancy, but inferentially dangerous. A long list of diseases was mentioned. He quoted Horace Green, who maintained that chronic follicular pharyngitis is an impediment for life expectancy, for the reason that this disease might ultimately lead to phthisis. Many other affections were mentioned as influencing life expectancy.

DR. J. HOMER COULTER believes that the medical directors should select younger men as examiners, because the colleges of later years have devoted more attention to life insurance examinations and physical diagnosis as a specialty than formerly, consequently the men who have graduated within the last twelve or fifteen years are better prepared to make critical examinations, when necessary. Medical colleges should establish a chair of insurance examinations. When this is done there would be a practical application of the theories advanced by Dr. Casselberry.

DR. WILLIAM L. BALLENGER said that all patients with chronic hoarseness should be subjected to a critical examination before being accepted as risks, all who have a chronic pus discharge and all with cyanotic hue of the mucous membranes of the nose and throat.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

DR. GEORGE W. WEBSTER followed with a paper on this subject. By the early recognition of this disease he means a positive diagnosis made at the earliest time that tubercle bacilli are found in the sputum, either by the aid of the microscope, or by the inoculation of animals, and a tentative probable diagnosis long before this time. He first described the clinical manifestations, including an examination of the sputum, and then other means and methods which are available and valuable, such as the use of potassium iodid, tuberculin, the X-ray, and the inoculation of animals.

The family history should be carefully investigated, for two reasons: 1. The peculiar type of chest and tissue in which resistance is diminished and tuberculosis is likely to develop is inherited. The degree of immunity is below the average. What is inherited is rather an increased vulnerability to adverse conditions of all kinds. 2. Where there has been tuberculosis in the family, the environment has been unusually favorable for the occurrence of infection.

Dr. Webster then discussed, in their order and at considerable length, personal history, age, occupation, habits, previous illnesses, symptoms, general examination, mensuration, circulatory system, palpation, percussion, auscultation.

The earliest respiratory sign of beginning tuberculosis is enfeebled breath sounds, or a slightly roughened harsh respiratory murmur, audible during expiration; or the expiratory sound slightly prolonged. This slight increase in the relative length of the expiratory murmur may be the only sign at first and may not have the slightest suspicion of a tubular quality, but is slightly increased in intensity.

Auscultation of the voice is of great value in confirming the findings of percussion and auscultation. Temperature is one of the most reliable guides. In all doubtful cases it should be carefully taken at least four times in the day and for several successive days. When the temperature is persistently above the normal, especially in the evening, it deservedly arises above the dignity of a mere suspicion. The sputum should then be examined for tubercle bacilli.

The value of the serum test as a diagnostic aid is as yet not fully determined.

The essayist spoke of a new sign of tuberculosis to which the attention of the profession has been directed by Murat, which consists of a subjective sensation of vibration in the affected apex on loud speaking. Dr. Webster has been able to confirm this sign in cases far enough advanced to cause consolidation, this facilitating the conduction of vibrations, but at this stage it is not needed. He has failed to elicit it in the earliest cases.

The X-ray has its advocates as a valuable means of early diagnosis, but the cost of the necessary apparatus, together with the high degree of technical skill required, will serve to limit its value, which has not yet been satisfactorily demonstrated.

The iodid of potash test is one of very considerable value. In those cases in which there are very faint physical signs and an absence of even the amount of sputum necessary for a microscopic examination, or where we desire to determine the location and extent of the tuberculous process, this method offers many advantages. The author directed attention to and quoted from a paper by Dr. Edward F. Wells, read before the Chicago Society of Internal Medicine, December, 1898, and published in THE JOURNAL, Feb. 4, 1899, in reference to the iodid of potassium test.

He presented a mass of evidence for and against the tuberculin test. Opponents of the test allege unreliability, reaction in other diseases, notably syphilis; no reaction in cases of undoubted tuberculosis. Its advocates assert that it is safe, delicate, reliable, and that in very many cases it furnishes an absolutely safe means of making an absolute diagnosis.

Dr. Webster presented the following conclusions: 1. There seems to be no agreement or understanding as to what constitutes the "pretubercular" stage or what is meant by this term. Does it apply to that syndrome of symptoms which arise after infection has taken place; or, to that condition in which vulnerability is increased, the degree of immunity lessened, whether from hereditary predisposition or the effect of disease, unsanitary surroundings, bad habits, impaired nutrition, etc. This may seem a nice distinction, and yet such a discrimination must be made. In the former, any characteristic phenomena are symptoms of tuberculosis; and in the latter they are simply those of other diseases, types, etc., which should warn us that in these cases tuberculosis is especially likely to develop. To speak of such phenomena as pretubercular in the sense that they all make up a symptom group indicating that tuberculous infection has already occurred, is absurd. To speak of it as a "stage" of a disease before the infection has occurred is equally preposterous.

2. We should be able to recognize definitely those cases in which there is that form of chest and type of tissue, together with low vital index, lessened vital capacity, diminished respiratory expansion, perimeter below the normal, corpulence below standard, in which tuberculosis is very likely to develop. This should never be designated the pretubercular stage of tuberculosis.

3. We should also be able to recognize the probable occurrence of infection by the malaise, gradual loss of weight, sense of fatigue, upon slight exertion, digestive disturbances, hacking cough, occurrence of single or repeated hemorrhages, night sweats, increased frequency of low tension pulse, slight evening rise of temperature. In these cases the finding of a slight localized bronchitis in one apex or the slight early auscultatory signs alluded to, ought to enable us to make a correct diagnosis whether the tubercle bacilli are found in the sputum or not.

4. When the tubercle bacilli are present in the sputum there is no excuse for not making an absolute diagnosis.

5. In doubtful cases, the iodid test, and the tuberculin test, may be resorted to with confidence in their safety, efficacy and reliability.

6. But while we should and do welcome every new symptom, sign and method; and while we hail with joy every ray of new or additional light which will enable us the better to read the

symbolical language of disease aright, interpret the "handwriting on the wall," the great need of the hour is for men well trained in correct clinical methods, and in the art and science of physical diagnosis rather than the addition of new methods.

DR. ROBERT H. BABCOCK indorsed in the main what had been said by the essayist, and called attention to the persistent lightness of weight presented by individuals who have a strong tendency to tuberculosis. Individuals of spare weight, who have an inherent tuberculous tendency, are not only of light weight, but they present a peculiar narrowing of the chest, or constriction of the apices, with lightness of bone structure. The pulse of incipient tuberculosis is accelerated and one of low tension and small volume. However, in some cases he has found tuberculosis in individuals whose pulse was not accelerated. In one case the pulse was 80, yet the patient had a marked lesion of the right apex with bacilli in the sputum. A temperature suspicious of tuberculosis is one between 99.5 and 100.5 F. An important point to remember is the facility with which it becomes accelerated on exertion.

DR. EDWARD F. WELLS believes there is no pretubercular stage in tuberculosis. He laid stress on the importance of fetor. Nutritional changes occur with loss of weight. Loss of weight is most marked during febrile attacks, and it is usually not regained. In cases of diffuse miliary tuberculosis, at least in some of them, attended with a good deal of fever, there is no expectoration, or no bacilli in the sputum. The diazo reaction is of certain value. The blood-count is likewise of value in tuberculosis. He has used the sphygmograph constantly for fifteen years, and he has yet to see a case of anemia of any sort, or a case of chlorosis, in which the pulse tension is not greatly reduced.

DR. JOHN A. ROBISON said that while he believes in the majority of cases the tubercular diathesis or tubercular predisposition is inherited, there are many cases in which there is a direct transmission of the tubercle bacillus from the parent to the child. The bacillus of tuberculosis may pass through the placental circulation of the mother to the child. The tubercle bacillus is found in glands and other tissues of children and adults who are apparently healthy. An early sign of incipient tuberculosis is the prolongation of the expiratory sound, heard on auscultation; this sound is accompanied by a rise of pitch. While he does not believe there is really a pretubercular stage, there is a stage which Hare calls the stage of hyponutrition. Lack of nutritive power occurs in persons whom we denominate as those having a tubercular predisposition.

St. Louis Medical Society.

CARCINOMA OF TONGUE: TOTAL EXTIRPATION.

DR. A. H. MEISENBACH presented specimens from a patient 65 years of age, strong in appearance, of good habits, who had smoked a pipe for many years. On account of the front incisor teeth in the lower jaw being defective, he had held his pipe well down in the floor of his mouth, mostly on the left side, and last October he discovered a nodule below the lower jaw-bone about an inch to the left of the symphysis. This grew and became painful, so he shifted his pipe to the right side. The tumor kept on growing, he consulted several physicians without results, and came to St. Louis for relief.

The patient was first seen in consultation with Dr. Henry Summa, on April 1. Examination revealed a very hard mass occupying the floor of the left side of the mouth, extending backward behind the base of the tongue; on the right side the floor was also infiltrated, extending only as far as the first molar tooth. The tongue was so bound down that the patient had no control over it. The body of the tongue did not seem to be involved. At the inferior margin of the jaw-bone, on the left side, about an inch from the symphysis, there was a fistulous opening. On pressing the floor of the mouth pus could be expressed from the fistulous tract. The diagnosis of carcinoma was made and operation suggested, but without any assurance of positive cure and no recurrence.

On April 3 Dr. Meisenbach operated, at the Pius Hospital, assisted by Drs. Henry Summa, Heideman, Auf der Heide and Robert Hughes, Denver, Colo. Under chloroform, a preliminary tracheotomy was made, low down. An ordinary large-sized No. 4 canula was introduced. The pharynx was tightly tamponed with iodoform gauze, shutting off the upper air-passage from the field of operation. Chloroform was administered through the tracheal tube, to the completion of the operation. A combined Kocher and Sedillot operation was done, the incision of the former extending from below the mastoid process on the left side to the greater cornua of the hyoid bone and parallel with it, about 1 cm. above it to the median line. The second incision (Sedillot) began about 1 cm. below the mucous margin of the lower lip—thereby saving the coronary arteries from being cut—in the median line, going down to the bone over the symphysis, and extending downward joining the first cut at right angles. The flap thus formed on the left side was dissected up to the inferior margin of the lower jaw, tying the facial artery and vein. The mucous of the lower lip was next cut away from the alveolar process in the median line. A key-hole saw was used to divide the jaw-bone through the symphysis, and both halves were pulled aside giving free access to the floor of the mouth. The operation was continued by using the scissors, cutting through the healthy tissue, beginning at the lower part of the mass above the hyoid bone and freeing it from below upward. During the dissection the lingual artery on the left side was exposed and tied. Having freed the tissues of the floor of the mouth from the left half of the jaw, the tongue could easily be drawn down into the floor of the mouth, with the scissors the tongue was cut across as near as possible to the epiglottis, leaving a bridge of tissue on the right side, in which was the right lingual artery. This bridge was clamped and the tongue cut away. The artery was tied. The jaw-bone was drilled and two silver wires introduced, bringing it again into place, the ends were left long and sticking out of the incision, so that the wires could be removed when the bone was united. The incision was united with a running suture of fine silk. Previous to suturing the wound the packing in the pharynx was removed and replaced by a fresh one, leaving the edges protruding through the fistulous opening below the jaw, the edges of which had been freely excised by the scissors.

Dr. Meisenbach said that the operation was practically a bloodless one, and, on account of the ease with which the anesthetic could be given through the tracheal tube, the pharynx being plugged, it was robbed of many of the unpleasant features that these operations sometimes give rise to if done without preliminary tracheotomy. The canula was left in the trachea, the pharynx kept plugged and the patient kept nourished by rectal enemata. The tracheal tube was removed and feeding commenced with the stomach-tube, on April 17.

The Doctor pointed out that, barring the recurrence of the disease, there are three sources of danger in the operation: 1, hemorrhage; 2, pneumonia; 3, sepsis.

It is of the utmost importance to have full control of the operative field. This can be done by such a method as he used in this case, preliminary ligation of the lingual arteries not then being necessary. Ligation of the arteries at best is tedious work and in this case would have been difficult on account of changed anatomic relations, due to the inroads of the disease.

VAGINAL EXTIRPATION OF THE UTERUS: FIBROMYOMA.

Dr. Meisenbach also presented a specimen of this, from a patient 55 years old, seen March 14. She complained of uterine hemorrhage, irregular in character—lasting three weeks at a time, stopping a few days and then coming on profusely. She weighed 250 pounds, so manual examination was very difficult. The uterus was large, freely movable, 5½ to 6 inches in depth. There was nothing suspicious about the os or vagina. On March 17 he made exploratory curettement. Microscopic sections revealed only endometres interstitialis. Packing and rest and hemostatics did not arrest the bleeding. Although microscopic examination was nil, this was not conclusive evidence that carcinoma could be entirely excluded.

At the menopause fibroids usually cease to give trouble, as well as hyperplasia, so the case was more or less obscure. The patient continuing to lose blood and beginning to feel its

effect, he suggested operation, which was done April 5, at the Lutheran Hospital, by the vaginal route, on account of the thick abdominal walls.

Philadelphia County Medical Society.

April 11, 1900.

Dr. J. H. Musser, President.

SYMPOSIUM ON EMPYEMA.

DR. L. SHARP spoke of a patient who suffered from this condition as a sequel of pneumonia, was operated on and the abscess cavity drained for several months. Considerable discharge continued and another operation was done, when it was found that portions of two drainage-tubes had been retained within the abscess. These were removed and, after a considerable period, the man recovered.

PLEURAL EXUDATES AND PHYSICAL SIGNS.

DR. HERMAN B. ALLYN read a paper entitled "Pleural Exudates with the Physical Signs in the Lungs." He considers the most important physical signs as diminished or absent vocal fremitus, diminished or absent vocal resonance, tubular breathing, and displaced organs. Austin Flint has reported instances of pleural exudates in which the physical signs were variable. The speaker had treated a case in which there was flatness, increased vocal fremitus and subcrepitant râles. Movable dulness, and Skodaic resonance anteriorly are also very important physical signs. Puncture with a needle is always the most certain method of determining the presence of fluid within the pleural cavity. The aid furnished by a skiagraph is very great in some cases.

ETIOLOGY AND PATHOLOGY OF EMPYEMA.

DR. JOSEPH MCFARLAND read a paper entitled "The Etiology and Pathology of Empyema." He regards the condition as an infectious inflammatory process of the pleura, due to traumatism, local disease or to metastasis. As to traumatism as an exciting cause, the history in most cases would be hard to trace. As to local disease, tubercular abscesses were important. Metastasis may take place through the lymphatic channels, from an infectious process elsewhere. As to the bacteriology of the condition, in children the pneumococci, in adults the streptococci, have been most frequently present. Tuberculous empyema is not as common as generally supposed. In children the prognosis is generally favorable, while in adults it is grave. As a rule the left side is most often involved. The fluid aspirated may contain leucin, tyrosin, cholesterin, uric acid, pus cells, and blood. The pulmonary pleura is more frequently involved than the parietal. Spontaneous rupture generally takes place in the fifth interspace.

SURGERY OF EMPYEMA.

DR. EDWARD MARTIN spoke of the surgical treatment of empyema. The most important plan of prophylaxis is aspiration as soon as the fluid becomes purulent. The technic, while simple, is often carried out in a wrong manner. The sight of the wound should be in the eighth interspace, slightly anterior to the angle of the scapula. The parts should be anesthetized and an incision should be made through the skin with a tenotome, and then the trocar and canula inserted. The needle should not be thrust through the external skin. The Doctor has practiced aspiration and drainage with advantage. In some cases it would be advantageous to resect a portion of a rib. Small cavities may be packed with gauze. In old cases frequently the only relief is a resection of a portion of the chest so as to allow collapse of the chest walls. Serous effusion is best treated by aspiration.

DR. S. SOLIS COHEN spoke of certain difficulties met with in the treatment of special cases, and also the difficulties of diagnosis. In one instance three ineffectual attempts were made to aspirate, and afterward the person was anesthetized and the abscess opened. As to the prognosis, he knew of one case in which the tubercle bacillus was the exciting cause. An incision had been made over the abscess, causing it to drain for a period of several months. Later another one opened higher up in the axilla. After a period of six years the patient is still living. In the speaker's opinion the most favorable cases are those following pneumonia.

DR. L. BRINKMANN said he generally uses the antitoxin needle half filled with normal saline solution. He believes that irrigation of the cavity would rather increase than decrease the amount of discharge. In resecting a rib the patient will often cough violently, tearing apart new adhesions, and this is a disadvantage.

DR. W. E. HUGHES stated that tubular breathing is nearly always associated with pleural effusions, and this seems to be more fully recognized by the English than the American physician. The tubular breathing in pleurisy is different from that of pneumonia, in that the former is more insistent and superficial. As a diagnostic sign he regards displaced organs as of the greatest importance. In aspirating he would not depend on a hypodermic needle, as the orifice is too fine to permit of thick pus escaping into the barrel of the syringe. He believes that all cases of empyema should be drained early, and further that all the fluid possible should be removed at the first operation.

DR. MORDECAI PRICE spoke of the condition when the abscess is sacculated. He believes in resecting a rib, washing with boric acid solution and inserting a double drainage-tube.

DR. W. L. RODMAN spoke of the case referred to by Dr. Cohen. To say that most cases of empyema and pleurisy are of tuberculous origin he regards as an error. He does not insist on resection of a rib, but has found that thoracotomy often gives relief.

DR. H. R. WHARTON agrees on early operation in these cases. He does not believe that resection of a rib is always necessary. Drainage-tubes will often accomplish the same purpose. He has changed his mind in regard to the teaching that most cases of empyema are of tuberculous origin.

ELEPHANTIASIS OF LEG.

DR. DAVID RIESMAN, through Dr. Eshner, presented a case of elephantiasis of the leg, in a man of middle age, who had suffered from measles and pneumonia; eight years ago he had a severe fall down stairs. He is a foundryman, and his present illness dates back to four years ago, when he observed enlargement of the left leg, at first painful, especially during certain changes of the weather. He also suffered from pains in the abdomen. Some time after the process began in the left leg the right became much swollen, and is now the larger of the two. The skin is cold and dry, and does not pit on pressure. For relief of pain, 5-grain doses of antipyrin have been given. Several attempts have been made to detect the filaria sanguinis hominis, but without results.

Detroit Medical and Library Association.

April 23, 1900.

TWO FATAL CASES.

DR. D. M. CAMPBELL read a paper with this title. The first case was in a girl of 12, who had been in her usual health up to February 10, when her parents noticed a small pimple on her forehead. This was ruptured the next morning, by the child, and a very small quantity of pus was evacuated. Late that afternoon she had a chill followed by fever. On the following morning the family physician was called. Besides a temperature of 104 F., a pulse of 140 and the general symptoms accompanying fever, the right eyelids were swollen and there was exophthalmus. At 4 p. m. the temperature was 106 F. and the pulse 160. The other conditions were more marked. Dr. Campbell was called as consultant, and at 10 p. m. found a temperature of 105 F. (axilla), the pulse too rapid to count, the patient comatose, widely dilated pupils, enormous exophthalmus on the right side, and great puffiness on the eyelids. No pus was reached through the deep incisions made into the orbital cavity. The child died the next afternoon.

The second patient was suffering from double phlegmonous orbital cellulitis. Great quantities of pus and necrotic tissue were evacuated through free incisions made deep into the orbital cavity. In spite of this the patient died comatose, showing all the evidences of a general septic infection.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION.
61 MARKET STREET, - CHICAGO.

SATURDAY, MAY 12, 1900.

EFFECTS OF REMOVAL OF LARGE PORTIONS OF THE DIGESTIVE TRACT.

The tolerance of the human body to surgical intervention and aseptic traumatism, without excessive hemorrhage or shock, is at times quite remarkable. Anatomic structure seems to be so organized and physiologic function so adjusted that there may be compensation for even extensive destruction or ablation of tissue. The records of surgery contain numerous instances in which large portions and even the whole of organs considered vital have been removed by accident or design and life has been preserved. Thus, the kidney, the spleen and the stomach have been removed entirely and successfully. Large portions of liver and of intestine, and considerable portions of brain have been exsected with relatively little inconvenience. It can be readily understood that if excessive amounts of the digestive tract be removed death may result from inanition, although it has not been definitely determined what amount of loss can be tolerated. It has been thought that removal of more than one-third of the small intestine is dangerous to life, causing fatal marasmus after a time, although in some experimental observations on animals resection of half the small intestine was well borne. It has been found that the results of resection of the beginning of the jejunum are more serious than those of resection of more distal portions of the bowel. A not inconsiderable number of cases are on record in which more than one meter of small intestine has been removed from human beings. The operation was survived in the majority of cases, and in most digestion was not notably impaired. In a small number, more than two meters of small intestine have been removed, but in most of these digestive disorder followed. To the cases already reported Schlatter[1] adds another in which he resected about two meters of small intestine. The patient was a strongly built, well-nourished man, 23 years old, who received a stab-wound in the hypogastric region and immediately fell to the ground, the intestines protruding from the wound. With aid, the man walked a distance of 320 yards, and in a short time a temporary dressing was applied. He was received at the hospital eight hours after the infliction of the injury. After removal of the dressing, about two meters of small intestine were found lying in the right hypogastric region, the greater part of which varied in color between deep dark blue and black. The serosa was lusterless. The protruding intestine was tightly grasped within the small wound and in places undergoing necrotic change, and resection was with some difficulty effected. The removed portion of bowel measured 92 cm. in its shortest length. The further course of the case was complicated by an attack of urticaria. The patient drank tea on the day of the operation, ate fried sausage on the seventh day, and was on a full diet on the twenty-fifth. He was permitted to stand on the thirty-first day, and was discharged cured on the fifty-ninth, having gained nearly 24¼ pounds in weight in the course of four months. A study of the digestive processes showed that while nitrogenous assimilation was not seriously interfered with, that of fats was considerably impaired. Later reports concerning the patient, some eight months after the operation, indicated that he could do but little work and this but slowly and with many intervals for rest. He lived principally on broths, soups and animal food, and was quite unable to tolerate solid food. He had lost a slight amount in weight. This case would seem to show that the process of digestion may be seriously interfered with, even in young robust patients, by the removal of more than two meters of small intestine, unless precautions are taken to secure the requisite sustenance.

[1] The Lancet, January 27, p. 217. THE JOURNAL, February 17, p. 419.

PSYCHIC SARCOLOGY ET AL.

Along with the delusions of osteopathy, Weltmerism, goats' lymph, etc., we have from Missouri still another "Psychic Sarcology," which is notable if only for its name. It would appear to be a sort of nomenclatory misfit, but it doubtless has its utility—"words of long length and thundering sound" sometimes take in more than the simple rustics. It is only one evidence, however, of the tendency to which the other medical delusions mentioned above, together with Dowieism, and the generally pervasive "Christian Science," are witnesses—the aptitude of fallen man to go after false gods in medicine, religion and efforts at social regeneration. Just at the present time this tendency seems unusually rampant, and the reason why this "craze of quackery" exists has troubled some of our contemporaries. If we were to attempt to answer the question, we could suggest several reasons why. While science has advanced, especially in its practical applications, more during the past century than in the centuries before, the mental development of man as a species has made no such remarkable strides. We have now living no greater thinkers than those of the remote past; we have accumulated facts but do not handle them in all respects any better than did our predecessors. The universal vulgarization of science has neither made a race of philosophers nor necessarily bettered the average human power of judgment, but it has perhaps spread broadcast the little knowledge that is a dangerous thing. It is a question whether or not modern methods of education, with their intensely practical side, are really better for turning out cultured and well-balanced men and women than the old limited classical ones, which none can honestly deny had some real educational and disciplinary worth. It is said too, on every hand now, that there is a decay of faith,

that religion has lost some of the hold it formerly had on the masses of mankind. If these things are so, and they may be to some extent, it is no great wonder that false systems prevail; when man loses his faith it is not in his nature to depend on himself, and he must therefore take up with superstition of some kind or other. Science, falsely so-called, is the most convenient idol of the day, whether it be in the form of Eddyism, Dowieism, Ingersollism, or any other heterodoxy that is in fashion at the time. There is also a great deal of what Sir Michael Foster has called "blatant science that is worse than the superstition at which it scoffs," and its effect is too often to only prepare the way through unfaith to the most aberrant form of belief. The discontent so prevalent at the present time is another factor, though perhaps a less direct one, in bringing about the special evils here in question. It is not altogether the healthy discontent that tends toward progress, but is the destructive one based on envy and the meaner impulses that in the species reverts to savagery. Our civilization is after all only skin deep with a large proportion of the population, who only need the veneer rubbed off to fit in with and take up any fetish that may present itself. Just now there is too much useless suffering with the itch of discontent, and when, as a popular writer has said, our whole civilization begins to scratch itself it is a serious matter.

Taking all things into consideration it is not so difficult to see a possible reason why quackery should flourish at the present time, and especially why the special medicoreligious frauds of the day should exist. There is, however, no reason for pessimism as to the future, the world will not retrograde into barbarism and superstition, and we are not on the threshold of a second Dark Age. The disturbing present conditions so far as they exist are, we trust, only ephemeral, and while there will probably always be some quackery, we have for our comfort the truth enunciated by Mr. Lincoln, that it is impossible to fool all the people all the time.

THE CLASSIFICATION OF TUMORS.

The modern doctrine of tumors rests wholly on the basis of histogenesis. Some of the shortcomings and the objections to the present embryologic classification of tumors are noted by Klaatsch[1] and by Charles Powell White.[2] The former points out some of the inconsistencies which are creeping into our classification, and that the distinction between mesodermal and other structures of the body is in reality not as hard and fast as it is usually drawn. White emphasizes the fact that the developmental origin of some parts of the body is not yet fully explained; the present onkologic classification separates tumors that are not distinguishable histologically, such as some forms of carcinoma and endothelioma; some authors, for instance Ziegler, class tumors of epiblastic origin—the gliomas or neuro-epitheliomas—among the mesoblastic ones. In order to overcome these inconsistencies, and also in order to avoid all theories as to the as yet unknown etiology of tumors, White proposes a purely morphologic grouping and definition. He defines a tumor as "a mass of cells, tissues or organs, resembling those normally present in the body but arranged atypically, which grows at the expense of the organism without at the same time subserving any useful function therein." This statement seems a serviceable one. It seems to include all tumors and to exclude retention cysts, hypertrophy and hyperplasia, and also inflammation, because the inflammatory processes are held to be adaptive and useful changes. White divides all tumors into three classes, viz.: 1. Organ tumors—the teratomas of the present classification. 2. Tissue tumors, which include all so-called benign or simple tumors of epithelial or mesoblastic origin. 3. Cell tumors, i. e., the sarcomas and carcinomas. The present classification of tumors on the basis of embryologic origin may be imperfect and difficult of application in special cases, and while it in a measure involves a theory as to the origin of tumors, yet the study of their histogenesis incited by this theory has borne rich fruit, as perhaps shown more especially by the remarkable and partly quite recent developments in regard to adrenal tumors of the kidney, the adenomyomas and other tumors of the female genital structures, the neuroepitheliomas, and the embryonal adenosarcomas of the kidney. A theory which has given rise to so many important discoveries should not be too hastily discredited or abandoned.

[1] Münch. Med. Woch., Feb. 7, 1899.
[2] Jour. of Path. and Bact., 1899, vi, 220.

THE LYMPHATICS OF THE LUNG.

Councilman[1] points out that the lobule of the lung constitutes a definite unit in its anatomy, normal and pathologic. The outlines of the lobules are seen most perfectly on the pleural aspect of the lung; they are triangular, the base corresponding to the pleural surface, and are separated from one another by small strands of connective-tissue which forms either a complete investment of the lobule or is in places wanting. At the apex the bronchus and the artery enter. The small areas supplied by the terminal branches of the bronchus are commonly called "acini," though Miller has designated them lobules, but the use of the term lobule in this sense can be at once seen to be confusing. The bronchial passage ends in an atrium, thoroughly described by Miller, from which the air-sacs or infundibula are given off, and from these arise the air-cells or alveoli. Councilman emphasizes the importance of this atrium because it is the starting-point of the focal pneumonias of children.

Accompanying the bronchial branches are branches of the pulmonary artery; a small amount of connective tissue accompanying the arteries, maintaining some connection with the perilobular connective tissue; veins are also found in the fibrous septa, the largest

[1] Jour. Boston Soc. of Med. Sci., 1900, iv, 166.

at the periphery of the lobules. In focal pneumonia of children Councilman found the lymphatics distended so that they could be followed with ease. They are described as originating about the acini, and divided into two sets: 1. A central, running along the pulmonary arteries and emptying directly into the peribronchial glands at the root of the lungs. 2. A set which ramifies in the interacinous and interlobular septa and empties into the pleural lymphatic plexus. The second set is the more extensive; its vessels are provided with valves which point toward the pleura. When a smaller vessel enters a larger, the walls of the smaller project for some distance into the lumens of the larger, forming an effective valve. These interlobular lymphatics are important because it is probably through them that infections in the center of the lung extend to the pleura. They also play a prominent rôle in the absorption of exudates and in the removal of organisms entering the lungs.

The central lymphatics are large vessels which often become greatly distended in pathologic conditions. Small branches from the peribronchial tissues and probably also from the tissue of the acini open into them. Councilman did not find valves in the central lymphatics, but he thinks they are probably present; neither has he found any connection between the central lymphatics and the peri-arterial, but it is reasonable to suppose that such exists.

A TRAITOROUS HOSPITAL CORPS.

The *New York Medical Journal* comments with deserved severity on the treason, to the Geneva Cross, of a so-called hospital corps that went from this country to the Transvaal. No censure can be too strong for men who thus violate their voluntarily assumed obligations, nor, whatever our sympathies may be in other regards, can we justify the Boer Government for accepting them as militant recruits. It is said that the Boers as a class have a distrust of medical assistance from the outside and it is hinted, we hope unjustly, that they encouraged rather than otherwise the transformation of a hospital into a combatant force. So far as the facts have come to us there is enough to suggest greater care in those who have influence or interest in the international Red Cross movement in endorsing or recommending volunteer hospital corps for the present war, unless they go under particularly well-known and reliable auspices.

MEDICAL PRACTICE LAWS.

The efficient working of the new medical registration law of Michigan has been materially aided by a recent decision of the supreme court of the state, noted in our news columns last week. A graduate of a "fake" medical college obtained registry under the old law and has contested the right of the State Board to refuse him this under the law now in effect. The case was made a test one and the decision is that although registered under the old act he was not legally entitled to that registration, because the affidavit on which it was based did not show him to be duly qualified. It is said that about 780 so-called physicians will be ruled out by the decision, most of them holding diplomas from the Armstrong-Bland "Independent Medical College," though there are two other similar concerns that also appear to have done a thriving business. The authorities appear to be thoroughly in earnest in enforcing the law, and this will be very much to the advantage of the profession in Michigan, though much more needs to be done to bring the state up to the standard that is the ultimate object of the best wishers of our profession. It is, however, a step in advance, and will be followed later by others. In this connection it may be remarked that in Rhode Island, the only remaining New England state that admits to practice on a diploma, legislation is now pending to bring it abreast of its neighbors in this respect.

MEDICINE AND MISSIONS.

Among the subjects of interest discussed in the recent missionary conference in New York City was that of medical missions and their advantages in aiding mission work among the heathen, noted in our columns last week. It was the unanimous testimony that in this way, often before any other is opened, a successful attack on the strongholds of heathenism can be successfully inaugurated. That this must be so is self-evident; the wonder is that mission boards were so long in adapting this for their purposes. Amongst savages and unenlightened people generally, including the degenerates who take up with "Christian Science" and Dowieism, the healing of the body and the healing of the soul go together—the shaman, the sorcerer and the priest have alike the control of health here and hereafter. The destruction of the old faith and its replacement by the new can be no better aided by purely human agency than by the introduction of scientific medicine and surgery, hence the value of medical missionaries. That they can not always overthrow error proves nothing; medical science fails in this even in the most civilized Christian countries; the mental peculiarities that even the gods strive against in vain exist everywhere. But as a material accessory to mission work medicine must always take first rank, and as a profession we should be interested to have it always thoroughly representative of our best.

THE FUTURE OF THE NEGRO.

In an address delivered before the Tri-State Medical Society of Virginia and the Carolinas, Dr. Paul B. Barringer very forcibly presents his views on the medicosociologic aspects of the negro question in this country. He thinks the negro is, under present conditions, rapidly reverting to savagery, that the future of the country is in peril and that "unless a brake is placed on the ontogeny of this savage, the South will be uninhabitable for the whites." The picture he draws is a dismal one; we prefer to see a brighter possibility ahead, and hence are glad to be able to correct one or two of the premises on which his conclusions are based. He thinks that the negroes in the large Northern cities are not advancing as compared with those of the country districts of the same sections. It is true that they include many disreputables, but it would, we believe, be an error to say that they are retrograding, and the careful studies by students of degeneracy reveal a prevalent

type that, as far as physical stigmata are concerned, is a marked advance on the African and the southern field negro. One negro regiment recruited from these Northern negroes and officered by men of their own color made a record in service during and after the late war that ought hardly to fall under his wholesale condemnation of such organizations. The northern negro, city or country, is very far from being altogether what he ought to be, but he presents no very serious problems. In the South the vast number of the blacks renders the more serious aspects of the subject more prominent, and it is perhaps not surprising that pessimistic views are sometimes expressed. There may be in places a segregation of the blacks and some undesirable developments, but never a Hayti under properly supported Anglo-Saxon laws and institutions. The Jamaica negro is not always a pleasant individual, but he is not a Haytian. The development of the South will, we believe, bring out some interesting anthropologic evolutions that will be well worthy of study, but it does not seem that the future of the white race is in danger.

REDUCTION IN MORTALITY IN DIPHTHERIA IN AUSTRALIA DUE TO USE OF ANTITOXIN.

We have had so much to say on the subject of the treatment of diphtheria with the antitoxin that we hesitate to reiterate our position in this connection, but we feel that the truth can not be too securely driven home and that even yet some lives are needlessly lost that antitoxin could save. Statistics—the brute force of figures—and personal experience alike testify most eloquently to the efficacy of this method of treatment, and the saving of life thereby accomplished must forever stand as a monument to the scientific acumen and the unselfish devotion of a profession always distinguished by high motives and noble ideals. Some additional statistics of an interesting character in this connection are presented in a recent communication by Turner,[1] who reports the results of a study of the mortality from diphtheria in the three principal Australian colonies, Queensland, New South Wales and Victoria, for fifteen years, with especial reference to the influence of the antitoxin on the death-rate. In the eleven years preceding the introduction of antitoxin—from 1884 to 1894—the number of deaths from diphtheria and croup per hundred thousand in Queensland varied between 65.3 in 1885 and 35.8 in 1894, the mean annual death-rate per hundred thousand being from 1884 to 1889, 49.2, and from 1890 to 1894, 44.1; while during the four years of antitoxin-treatment, from 1895 to 1898, the number of deaths from the same diseases per hundred thousand varied between 21.2 in 1895 to 12.9 in 1896, the mean annual death-rate per hundred thousand from 1895 to 1898 being 16.4. In New South Wales the number of deaths from diphtheria and croup per hundred thousand between 1884 and 1894 varied from 62.8 in 1885 to 27.8 in 1886, the mean annual death-rate per hundred thousand being, from 1884 to 1889, 43.2, from 1899 to 1894, 47.7 and from 1895 to 1898, 18.4. In Victoria the number of deaths from diphtheria and croup per hundred thousand varied, between 1884 and 1894, from 92.2 in 1890 to 15.6 in 1893, the mean annual death-rate per hundred thousand being, from 1884 to 1889, 45.4, from 1890 to 1894, 39.8 and from 1895 to 1898, 19.7. In all three colonies the number of deaths per hundred thousand between 1884 and 1894 fluctuated between 72.6 in 1890 to 29.7 in 1894, the mean for the eleven years being 44.4, while the number of deaths per hundred thousand between 1895 and 1899 varied between 19.9 in 1898 and 16.4 in 1896, the mean for the four years being 18.7.

[1] Intercolonial Med. Jour. of Australasia, January 20, p. 39.

HEMISYSTOLE.

This designation has been applied to a condition in which it is supposed that there exists asynchronous action of the ventricles of the heart, so that with each contraction of one ventricle, one or more contractions of the other take place. The evidence as to the actual occurrence of such a phenomenon is, however, not conclusive. For obvious reasons the demonstration can only be made by experimental means, but the observations that have thus far been recorded in this connection are not wholly free from criticism. For these reasons Frank and Voit[1] undertook an investigation of the subject with the aid of specially devised apparatus. They employed a rubber manometer and made their observations on rabbits and dogs. Narcosis was induced by curare, the thorax opened in the middle line and a small, curved metallic catheter introduced through the left auricle and fastened into the left ventricle, while a straight metallic catheter with lateral fenestra was introduced through the jugular vein into the right ventricle. Both catheters were connected with rubber manometers, as was also a canula fastened in the carotid artery. In accordance with previous statements attempts were made to induce hemisystole, in part by means of suffocation and in part by means of poisoning with helleborein. Marked irregularity in the action of both ventricles, such as could be designated hemisystole, was, however, not noted in a single instance in either rabbits or dogs, although the observations were continued for long periods of time. Almost unexceptionally the pulsations of both ventricles were synchronous throughout, and each variation in the pressure curve of one ventricle was exhibited by that of the other. In some instances the carotid pulse failed, although that of the ventricles remained normal. Occasionally also there was slight disparity in the maxima of successive pulse-waves. These observations would seem to demonstrate that the condition of hemisystole does not develop under the influences to which it has been attributed, and it is thought that the designation is unjustified.

[1] Deutches Archiv. f. Klin., B. lxv, H. 5 u. 6, p. 580.

HYPERTHERMIA AND HYPOTHERMIA.

In spite of the fact that physiologists state that life can not be maintained for any length of time at temperatures above 110 or below 90 degrees, reports of both higher and lower figures are made from time to time, and often one is perplexed for an explanation. In some instances deception is obvious, and in others it can not be wholly excluded, but, even allowing for these, there still remain a number whose authenticity can not be doubted. The evidence, so far as it goes, would therefore seem to prove that extremes in either direction are possible, though, naturally only for brief periods. Hypotheses have not

been wanting to explain the mechanism of heat-regulation, but the problem is not easy of solution and the final word has not yet been said in this connection. In the familiar case of Teale, in which a lesion of the cervical spine was present, the temperature reached 122 F. Jacobi has recorded the case of a hysterical fireman in whom a temperature of 148 degrees was observed, Jones one of a girl in whom the temperature rose above 150, and Galbraith one of a young woman in whom he noted a temperature of 151; and in the same case a nurse noted one of 171. It is noteworthy that many of the cases of hyperthermia have occurred in malingerers or hysterical women or men. Not less remarkable observations of hypothermia have been recorded, a number of which are cited in a communication by Hulbert,[1] in which he reports a most remarkable case of morbid drowsiness in a man, 36 years old, in whom the rectal temperature fell as low as 81.6 degrees and on numerous occasions was under 90. Such hypothermia has been variously observed by others in connection with shock, collapse, as in cholera and pernicious malarial fever, with disease or injury of the spine or brain, with inanition, hemorrhage, chronic wasting disease, like carcinoma, with intoxication. as with alcohol, carbolic acid, uremia, with diseases of the skin as sclerema, and with heat-exhaustion.

THE IODIN REACTION OF SPERMATIC FLUID.

There are times when the determination whether spots on linen are due to seminal fluid or not may be of the highest medicolegal importance, and a method would be welcome that will permit a ready and reliable decision. Florence assumed that the seminal fluid may contain specific alkaloidal substances, and in order to determine this point undertook a study of the effect that the alkaloidal reagents would have on human spermatic fluid. Using a solution of iodin and potassium iodid he was able to obtain a reaction only when the iodin was present in amount sufficient to correspond to a solution of potassium tri-iodid. For this purpose he used 1.65 grams of iodin and 2.54 grams of potassium iodin to 30 grams of water, and added 1 drop of this solution on a glass slide to a watery extract of seminal stain. In the course of a few minutes there appeared brownish microscopic crystals, closely resembling hemin crystals and, like these, appearing in typical form as rhombic plates, together with numerous rudimentary forms. No other secretion, as well as brain-substance, alkaloids, dough, articles of food and spermin, yielded a similar reaction, but only lecithin and cholin did. It was believed that possibly the reaction was due to some previously unknown body peculiar to seminal fluid, but in view of the reaction yielded by cholin and lecithin it was deemed wise to employ the test as a preliminary one, and when it yielded a positive reaction to search for spermatozoids. Subsequent observers, however, obtained a similar reaction with spermin, muscarin, derivatives of nuclein and of uric acid, and still others attributed it to cholin and lecithin. In view of these rather radical differences of opinion Vertun[2] undertook a series of independent observations. A quantity of seminal fluid was added to a mixture of alcohol and ether, the supernatant fluid decanted, the extract precipitated with an acid alcoholic solution of platinum chlorid, the filtered alcoholic solution of platinum chlorid, the filtered precipitate dissolved in water and permitted to crystallize obtained in this way were placed on a filter and washed with a mixture of alcohol and ether until the wash-water was colorless, for the removal of the excess of platinum chlorid. The filter was then placed in a vacuum-exsiccator. In one case in which seminal fluid twelve hours old was examined crystals remained, indicating the formation of a double platinum salt of an organic base, and thus the presence of another base besides spermin. In two other cases, in which the seminal fluid was only a few hours old, no crystals remained, so that no other base and, therefore, not cholin, was present. As the reaction of Florence was present in all three cases it can be attributed to spermin, although in the one instance it may have been intensified by the presence of cholin. Inasmuch as the reaction has been yielded besides by members of the cholin group—cholin, muscarin, neurin—by spermin and by derivatives of nuclein or alloxuric bases—adenin, xanthin, hypoxanthin, guanin, carnin—it must be looked on as belonging to a group of substances and particularly a large number of organic bases. In view of these facts the development of the reaction with a watery extract from spots on linen would not indicate conclusively the presence of seminal fluid, but would necessitate microscopic examination for spermatozoids; nor would its failure to develop be sufficient to exclude the presence of seminal fluid. It was found further that the reaction was prevented in direct proportion to the albuminous concentration of the fluid tested.

[1] The Lancet, January 13, p. 84.
[2] Centralbl. die Krankheiten der Harn- und Sexual-Organe, B. ix H. 1, p. 1

URIC-ACID AUTOINTOXICATION.

Although much has been written on the subject of uric acid, it can not be said that there is universal agreement as to its influence in the causation of disease, or as to the means of affording relief from its reputed manifestations. While perhaps our present nomenclature may prove to be incorrect and current explanations inadequate, it is safe to assume that certain derangements in metabolic activity are capable of bringing about morbid manifestations of a more or less definite and sometimes even alarming character. Of this we have evidence in the development of gout, of diabetes, and of the condition or process that correctly or incorrectly, it is customary to speak of as uric-acid intoxication. Care must, however, be taken not to generalize too freely on the basis of scant knowledge of a precise character. The individual factor should never be forgotten or ignored, and a growing experience teaches that the reactions that take place in the body can not always be reproduced in the laboratory. Uric acid may appear in the urine of persons under widely different conditions—on a diet of milk, as well as on one of meat or carbohydrates; in those who abstain from, as well as in those who indulge in, alcohol; after exercise, as well as after rest—so that one is often at a loss for an explanation of its occurrence. For the present we must be satisfied with the statement that this represents an aberration in metabolism; but the patient is not so much concerned with the mechanism of

the process as with the treatment, or rather with its results. Some interesting observations of an original character were made in this connection in an address delivered a short time ago by Goodhart,[1] before the Reading (England) Pathological Society. He expressed the conviction that in the majority of cases of uric-acid intoxication the condition is scarcely one of diet at all, as uric acid will sometimes appear in the urine when, so far as is known, all food capable of giving rise to it has been withheld. Uric acid is considered as an ash or a final product common to the many metabolic processes that take place within the body. In one case the cause may be the visceral sluggishness that is the common outcome of nervous exhaustion; in another the hereditary condition that determines gout; in still another a great or a sudden shock or great anxiety or exhausting illness; in others some early defect in the kidney; in others it may be an indication of senility and of a failure on the part of the organism to accommodate itself rapidly to various changes in its environment. The important part in the arrangement of a dietary is first to determine the metabolic capability of the individual. Thus, under suitable conditions even sugar and fat and alcohol in one form or another may be permitted. The object of treatment should be, so far as possible, to prevent the formation of uric acid rather than its elimination. The free drinking of water is a most useful measure, not only flushing out sand in the urinary passages, but also softening and disintegrating small calculi.

Medical News.

DR. GEGENBAUER, professor of anatomy at Heidelberg, has been awarded the Vohlbrecht prize of 12,000 marks for works on natural science.

COMPOSITION OF OLEOMARGARIN.—Secretary Wilson, of the United States Department of Agriculture, is making an effort to determine the ingredients which go toward making oleomargarin. It is believed that much of what is sold as pure butter is made from a mixture of cheap fats and tallow, together with deodorizing substances and artificial coloring matters.

COMMITTEE APPOINTMENTS.—At a meeting of the American National Committee of the XIIIth International Medical Congress, held at the Cosmos Club, Washington, D. C., May 2, with Dr. W. W. Keen in the chair, the secretary read the minutes of the preceding meeting and reported that about two hundred American physicians had already joined the Congress. It was unanimously voted that the president of the American Medico-Psychological Association be added to the Committee, and that the organizations whose presidents compose the Committee be requested to contribute to the expenses of the Committee. The meeting adjourned subject to the call of the president.

INVITATION TO INTERNATIONAL DERMATOLOGICAL CONGRESS.—At the meeting of the American Dermatological Association, just held in Washington in connection with the Congress of American Physicians and Surgeons, a committee was appointed consisting of Drs. J. Nevins Hyde, of Chicago, Henry W. Stelwagon, of Philadelphia, and T. Caspar Gilchrist, of Baltimore, to represent the Association at the International Dermatological Congress which meets in Paris in August. The committee is to extend an invitation, in the name of the Association, to the members of that Congress to hold the next international meeting in New York City. It was further instructed, in the event of the Congress giving a favorable response, to present the name, and urge the election, of Prof. James C. White, of Boston, the first president of the American Dermatological Association, and an honorary member of the French and Italian Dermatological societies, for the presidency of that Congress.

PROGRESS OF THE PLAGUE.—Having one of the best harbors in the world, Sydney, N. S. W., acts as a shipping center for the South Sea Islands, and a correspondent writes that the plague is thus thought to have gained entrance from one of the New Caledonia group. Up to the date of writing (April 11), 94 cases were reported, with 31 deaths. All cases, with one exception, were in English-speaking people, the exception being in a Chinaman, and all but one can be traced to the original plague center around the wharves. Among other sanitary measures in progress, 28,600 rats were destroyed. It has also been demonstrated that the flea acts as a means of inoculation, and 4 cases are reported, all showing blebs, the result of flea bites. In three the blebs were broken before examinations could be made, but those from the other patient showed the bacilli of plague present. Plague serum has been used in about 1200 contacts. Cases of plague are also present in Melbourne, Perth West and Brisbane. According to the *British Medical Journal* (April 28), the deaths from plague in Bombay city showed an increase for the first week in April over the last week in March. For the first 4 days in April, in Karachi, the new cases were, respectively, 49, 31, 54 and 60, and the deaths, 34, 28, 33 and 42. For the same dates, in Calcutta, they were, 111, 109, 93 and 103, and the deaths, 99, 109, 104 and 89. One new case was reported in Mauritius for the week ending April 19.

MEDICAL SERVICE IN TRANSVAAL WAR.—S. Osborn, chief surgeon of the Metropolitan Corps of the St. John Ambulance Brigade, speaking of the hospital arrangements in South Africa (*The Lancet*, April 21), says that the war has upset many of their former ideas as to military surgery, because many seriously wounded men, suffering from injuries which would, ordinarily, have demanded operative measures, have recovered without surgical interference. While this might have been due either to the excellent antiseptic dressings adopted as first aid on the field, or to the nature of the projectile, he is inclined to think it is because of the antiseptic precautions. The ambulance and nursing organizations, in point of comprehensiveness and efficiency, he considers far beyond anything of the kind previously seen; and though he served in the Franco-German War, in the wars between Russia and Turkey and between Turkey and Greece, he says that never was the effort to save the lives and limbs of the wounded made on anything like the extensive scale found in South Africa to-day. In regard to the rescue of the wounded, the devotion shown by the ambulance section of the British army, and the completeness of the machinery by which the efforts have been aided, is most admirable, since every engagement has witnessed scenes of heroism in which the officers of the Royal Army Medical Corps and their helpers have themselves suffered wounds and death in the discharge of their duties. As to enteric fever, at Modder River 6 per 1000 of those inoculated and 9 per 1000 of the non-inoculated suffered from the disease, and the prevalency of this he considers the saddest feature of the situation.

[1] The Lancet, January 6, p. 1; THE JOURNAL, January 27, p. 225.

NEW YORK.

THE SIXTY-NINTH commencement of the Albany Medical College was held May 2. The class numbered twenty-five and is the last to be graduated under the three-year course. The address was made by Dr. Jas. H. Canfield, librarian of Columbia University, and Rev. Dr. Raymond, president of Union University, conferred the degrees.

New York City.

REV. GEORGE F. CLOVER, who has been connected for a number of years with St. Luke's Hospital, has been appointed pastor and superintendent to fill the vacancy caused by the retirement of the Rev. George S. Baker, previously noted in THE JOURNAL.

A FIRE in the industrial school on Randall's Island recently caused a panic among the inmates of the Children's Hospital and neighboring institutions. The school, which was a one-story frame building, was burned to the ground, but the fire did not spread to the adjoining buildings.

NURSES' CONVENTION.

About one hundred superintendents of training schools for nurses have just held a convention in this city, and during the three days they were in session discussed various topics connected with the training of nurses. Special attention was given to a consideration of the advisability of increasing the course of study to three years, fifty schools having already done so. They also adopted the following resolution:

Resolved, That this society strongly indorses the principles set forth in the Army Nursing bill recently brought before Congress, and pledges itself to use every effort to further the objects therein set forth.

HONOR DR. JACOBI.

A complimentary dinner was given to Dr. A. Jacobi on the evening of May 5, in commemoration of his 70th birthday. Dr. Joseph D. Bryant presided, and among those who responded to toasts were Carl Schurz; Seth Low, president of Columbia University; Dr. William H. Thomson, president of the Academy of Medicine; and Dr. William Osler, of the John Hopkins University. A notable feature of the evening was the presentation of the "Festschrift," a volume of 500 pages entitled "International Contributions to Medical Literature." This book is modeled after those annually presented to European scientists on similar occasions. For many years Dr. Jacobi has been widely known as an authority on the diseases of children, but particularly since 1870, when he became clinical professor in that department of the College of Physicians and Surgeons.

PENNSYLVANIA.

ELEVEN COWS near Spring City were recently declared infected with tuberculosis and ordered killed.

LAND VALUED at $25,000 has been left to the Sisters of St. Francis, for the establishment of a hospital for convalescents on the hills adjacent to Bridgeport. The proposed building will be constructed of gray stone, and when finished will cost in the neighborhood of $75,000.

PREVENTION OF INFECTIOUS DISEASES.

The annual report of Dr. Leonard Pearson, state veterinarian, and of the State Live Stock Sanitary Board, has been submitted to the Secretary of Agriculture. Of the $40,000 allowed the Board, $26,992.98 was paid for the destruction of tuberculous cattle; $233.50 for horses and mules suffering from glanders; $5692.03 for tuberculin tests and inspection of animals; $2906 for inspections, vaccinations, etc.; $3286.46 for animals afflicted with other diseases than glanders and tuberculosis, and $889.48 for special services in connection with the enforcement of the law regarding the prevention of diseases among cattle. There were 9 cases of glanders reported during the year. Anthrax occurred in the following counties: Bradford, Cambria, Chester, Delaware, Franklin, Jefferson, Monroe, Philadelphia, Pike, Potter, Susquehanna and Warren, with 236 deaths from the disease. Rabies was reported from 12 counties: Allegheny, Berks, Blair, Center, Chester, Clearfield, Clinton, Delaware, Erie, Montgomery, Philadelphia and Union. The number of tubercular cattle found was 1187. They were paid for at $22.30 a head.

Philadelphia.

DR. JOSEPH GOLDBERQUER has been appointed assistant to Dr. T. F. Richardson, medical officer in command at the Reedy Island Quarantine Station of this city.

DURING commencement week, a well-designed bust of the late Dr. George B. Wood, formerly professor of the practice of medicine in the University of Pennsylvania, will be presented to the University.

SUIT FOR $25,000 has been entered against Dr. Charles W. Dulles, to recover damages for illegally declaring the plaintiff insane. It is stated that the Doctor has a complete defense to all the charges made.

THE COMMITTEES on elementary schools and hygiene, of the Board of Education, recently adopted a resolution recommending that regular instruction be given in physical culture in the elementary schools and that a teacher be appointed to take charge of such work at a salary of $1200 a year, beginning next September.

MARYLAND.

DR. GEO. W. SIMMONS has been appointed physician to Kent County Jail, at Chestertown.

DR. JAMES W. URIC has been appointed health officer of Kent County, vice Dr. W. Frank Hines.

DR. J. L. NOBLE has been reappointed health officer of Caroline County.

Baltimore.

DR. WM. OSLER has been called to Canada to see his brother, who is ill.

DR. LEWIS W. ARMSTRONG has been appointed first assistant in the insane hospital at Bayview.

DR. ST. CLAIR SPRUILL has resigned the post of superintendent of University Hospital.

DR. N. G. KEIRLE, JR., has been appointed resident physician to Bayview Hospital, etc., and Drs. C. Howard Lewis, Frederick Crawford and J. L. McKnight assistant physicians in the same institution.

DR. WILLIAM R. STOVER was formally installed as resident physician in the Baltimore University Hospital, April 30. Dr. William D. Bacon was made assistant.

DR. JOSEPH CLEMENT CLARKE has been elected professor of psychiatry in the Woman's Medical College of Baltimore, vice Dr. Edwin A. Brush, resigned. Dr. Clarke is a graduate of the University of Maryland and superintendent of Springfield Asylum for the Insane, Sykesville.

A complimentary dinner was tendered to Prof. Wm. H. Welch, of the Johns Hopkins Medical School, May 4, by those who have carried on investigations in his laboratory in past years. On this occasion the "Festschrift," containing the work of his pupils and associates, was presented to him as a testimonial of affection and esteem and to mark the twenty-fifth anniversary of his professional career.

THE THOMAS WILSON Sanitarium for sick children was opened May 1. The hospital is eight miles from the city, on a hill six hundred feet above sea-level; there are three wards, each accommodating about thirty. The mothers of the children are allowed to come, their transportation being paid for them.

THE SCOPE of work in Johns Hopkins Hospital and Medical School has again been broadened. The hospital will offer special courses of instruction for graduates during May and June. This is intended to meet the requirements of practitioners of medicine and is almost wholly of a practical character.

OHIO.

SEVERAL CASES of malignant diphtheria having been found in Mansfield, the health officer caused an investigation to be made. A sick cat, with which the children had been playing, was found to have diphtheria germs in its throat.

APPROPRIATIONS.

The seventy-fourth general assembly of the State of Ohio, just adjourned, appropriated $480,400 for the Ohio Hospital for Epileptics at Gallipolis, for the fiscal years 1900 and 1901. For construction the sum of $125,000 is available, and the items are a general hospital ($35,000), administration building ($50,-

000), and two new cottages for patients ($40,000). The purchase of more land, including a considerable addition to the colony farm, is also authorized. Funds are provided for the continuation of the work in the pathologic laboratory, and a special appropriation has been made expressly to enable this laboratory to participate in the pathologic exhibit of the AMERICAN MEDICAL ASSOCIATION.

THE OHIO LAW.

The new medical practice act enacted April 14, 1900, by the Ohio Legislature is of more than local interest, and now that a copy of the measure has come to hand a satisfactory review of its provisions can be made. The number and character of the Board of Medical Registration and Examination was not changed, and the Board will consist, as formerly, of seven members, of whom three are "regulars." The new portions of the law will take effect on July 1, with the exception that students who were matriculated in Ohio medical colleges on Jan. 1, 1900, and who shall graduate from their respective schools and present their diplomas to the Board prior to July 1, 1904, shall be entitled to have their diplomas simply registered as provided by the existing statute. This concession to the students was necessary in order to silence their opposition to the bill as a whole, and it is not in any way unjust, for present students matriculated at Ohio colleges with the implied understanding that their diplomas when received would entitle them to a State license.

With this exception, all applicants to practice medicine in Ohio must pass a satisfactory examination before the State Board in the future in all branches of medicine; and more important still, shall present, as a necessary preliminary to their admission to the examination, certain specified evidences of previous education. In this respect the Ohio law is now second to none; for in addition to having a medical diploma granted after four years of study in a medical college which is recognized by the Board as in good standing, the applicant must show either that he has obtained the degree of A. B., B.S., or its equivalent from a reputable college; or a diploma from a normal school, high school or seminary, issued after four years of study; or a teacher's permanent or life certificate; or a student's certificate of examination for admission to the freshman class of a reputable college; or a certificate of his having passed an examination conducted by the Board itself.

From this it will be seen that the State of Ohio is no longer behind in the matter of medical legislation, but possesses a statute second to none in its standard of educational qualification.

The Board has always had some difficulty in adjudicating questions that arose from the presentation of diplomas which under terms of the former law in regard to various forms of foreign certificates, entitled the holder at home to practice a certain branch of his profession. This has been fully met in the new statute by a plain statement that the certificate must have conferred the *full* right to practice all branches of medicine or surgery in some foreign country. Another important provision is the one permitting the Board to arrange for reciprocity in registering certificates which have been acquired from state boards after examination when the other states have laws demanding an equal grade of qualifications. This is one of the first direct legal enactments toward arranging for reciprocity in registration, something in which so many medical societies are now interested.

While under the existing law midwives were required simply to produce evidence of some experience in order to secure a license, the new statute compels them to appear before the Board and take such examination as it shall require. Because many loopholes had been found by lawyers, in the section of the former law that defined the practice of medicine, a new one has now been enacted which will prove much more difficult of evasion, and even the Supreme Court of Ohio, which not long since held that osteopathy was not " an agency for the treatment, cure or relief of any bodily injury, infirmity or disease," will probably not be able to nullify this revised section. It will not be so difficult in the future to secure proof of the illegal practice of medicine. This section being of some general interest, it is given in full, as follows:

Any person shall be regarded as practicing medicine or surgery within the meaning of this act, who shall use the words or letters "Dr.," "Doctor," "Professor," "M.D.," "M.B.," or any other title in connection with his name which in any way represents him as engaged in the practice of medicine or surgery or midwifery, in any of its branches, or who shall prescribe or who shall recommend for a fee for like use any drug or medicine, appliance, application, operation or treatment of whatever nature, for the cure or relief of any wound, fracture or bodily injury, infirmity or disease. The use of any of the above-mentioned words or letters or titles in such connection and under such circumstances as to induce the belief that the person who uses them is engaged in the practice of medicine or surgery or midwifery or any of its branches, shall be deemed and accepted as prima facie proof of an intent on the part of such person to represent himself as engaged in the practice of medicine or surgery or midwifery.

The osteopaths having developed strength, largely through the influence of Senator J. B. Foraker, some recognition of them became necessary to the enactment of the law. Even then they almost succeeded in getting a law of their own passed, that would have nullified all restrictions governing the practice of medicine, and this measure was openly lobbied for by two judges of the Supreme Court of Ohio. The law, as passed, provides that an osteopath must have a diploma from a legal school of osteopathy which requires four years of study of at least five months, each taken in four separate years; and that he must pass a satisfactory examination before the state board, in anatomy, physiology, chemistry and physical diagnosis. It is also provided that osteopaths "shall not be granted the privilege of administering drugs, or of performing major or operative surgery."

The passage of this amended law is the full fruition of the dreams for many years of the leading members of the Ohio profession, and it required the most assiduous and most self-sacrificing labor on the part of the legislative committee of the State Medical Society assisted by committees of some of the local societies. The result, however, clearly demonstrates that when the medical profession shows itself to be determined in its requests to the politicians it can overcome all opposition. Because the new Ohio statute is to be administered by but one board for all the so-called schools of medicine, in addition to the commendable points above enumerated, it possesses features of superiority over any medical law in America, and it will no doubt for many years be a model after which other states will pattern. The politicians can not attempt to disturb it for two years at least.

Cincinnati.

AT THE commencement exercises of the Cincinnati College of Medicine and Surgery, May 2, diplomas were granted to thirteen young men and women.

TWENTY-SEVEN young men were graduated, May 1, from the Miami Medical College. The alumni banquet was attended by two hundred members.

A CITIZENS' committee visited the city council recently and secured the repeal of the compulsory vaccination ordinance.

ILLINOIS.

THE LADIES of the hospital board at Galesburg gave a benefit bazaar and concert May 1 and cleared $500.

Chicago.

DR. ARTHUR R. EDWARDS has returned from an extended European trip.

DR. JAMES B. HERRICK announces that he will hereafter limit himself to office and consultation practice.

LAST WEEK the donations to the fund for the hospital for consumptives were $1186, bringing the total up to $18,333. The committee awaits only the settlement of the labor trouble to begin building.

EXAMINATION of candidates for license to practice medicine was held May 3. There were 105 applicants.

KANSAS.

SIX ACRES of ground have been transferred to the Bethany Hospital Association at Kansas City for the consideration of $12,500, and on this site will be built a new $100,000 hospital.

Rev. J. H. James, of Oakley, Kan., has given $60,000 of this, and work will be commenced soon.

DISTRICT OF COLUMBIA.

BILL FOR INCREASE OF MEDICAL DEPARTMENT OF ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Sec. 1.—That there shall be added to the number of medical officers of the army now authorized by law, four assistant surgeons-general with the rank of colonel, thirty surgeons with the rank of lieutenant-colonel, thirty surgeons with the rank of major, and eighty assistant-surgeons with the rank of first lieutenant who shall have the rank of captain at the expiration of five years' service as now provided by law. Provided that the original vacancies created by this act in the grade of colonel, lieutenant-colonel and major shall be filled by seniority promotion in accordance with established laws and regulations.

Sec. 2.—Hereafter candidates for appointment in the medical corps of the army who pass a medical examining board in compliance with existing regulations, shall be appointed acting assistant-surgeons for a probationary period of six months; during this probationary period they shall attend the army medical school established at the army medical museum in the city of Washington, and the faculty of the army medical school shall report to the Secretary of War at the end of the prescribed course of instruction upon the fitness and relative standing of the probationary candidates; those who are recommended by the faculty may then be commissioned by the President to fill existing vacancies in the medical corps of the army.

Sec. 3.—Acting assistant-surgeons appointed in accordance with the provisions of Section 2 shall be paid $100.00 per month and shall not be entitled to any allowance or to mileage in reporting for the prescribed course of instruction, or in returning to their homes if they are not recommended for a commission.

Sec. 4.—The number of acting assistant-surgeons appointed in accordance with the provision of Section 2 shall not exceed the number of vacancies existing or to result from retirements during the probationary period.

Sec. 5.—Candidates who have rendered satisfactory service as acting assistant-surgeons or as commissioned medical officers in the volunteer army of the United States for a period of six months or more, shall be exempted from this period of probation and may be commissioned at once if vacancies exist and they pass a satisfactory examination as to their physical, moral and professional qualifications.

DELAWARE.

THE GOVERNOR has appointed the following trustees of the State Insane Asylum: Drs. J. J. Black of Newcastle, J. H. Wilson of Dover, and H. W. Baker of Seaford.

THE FOLLOWING members of the Wilmington Board of Health have recently been elected: president, George B. Ward; treasurer, James H. Morgan; secretary, Andrew A. Cahill; executive officers, Harry Graham, Thomas Garvey, George Spath and Thomas Welsh.

LOUISIANA.

THE SIXTH annual session of the Charity Hospital Alumni Association was held in New Orleans the 18th ult.

A LARGE CLASS was graduated from the medical department of Tulane University, May 2. The total number of students this year was 426, the largest in the history of the college.

NEBRASKA.

AT THE commencement exercises of Creighton Medical College, held in Omaha, April 27, a class of twenty-two received diplomas. Prof. J. L. Greene, of Lincoln, who is a member of the faculty, delivered the doctorate address, and Rev. M. P. Dowling, president of Creighton University, conferred the degrees and presented the prizes.

IOWA.

AT CEDAR RAPIDS, the Sisters of Mercy cleared over $1300 through a bazaar given to raise money for furnishing and equipping a hospital.

THE NEW St. Joseph's Hospital buildings were dedicated in Sioux City, May 6. The institution was founded about ten years ago, but the improvements and enlargements made recently have cost $150,000.

MISSOURI.

THE SUM of $3000 has been subscribed for the erection of a chemical laboratory at Westminster College, at Fulton. The building when completed will cost $5000.

THE COMMENCEMENT exercises of the Marion-Sims College of Medicine in St. Louis occurred April 27, and fifteen received diplomas from the medical department. Rev. J. W. Day addressed the graduates and Dr. Y. H. Bond conferred the degrees.

WASHINGTON.

A NEW WARD will be added to the Medical Lake Hospital for Insane; $4000 has been appropriated for the purpose and the plans are now being drawn.

SPOKANE is to have a new Protestant Hospital. John A. Finch has donated a site and about $15,000 has already been pledged. The cost will be about $50,000. It will be incorporated as St. Luke's Hospital, under the auspices of the Protestant Episcopal Church.

CANADA.

DR. G. A. B. ADDY, St. John, N.B., has gone to England to study pathology under Dr. Sims Woodhead.

DR. J. W. DANIEL has just been elected mayor of St. John by over 600 majority.

THE MEDICAL health officer of Toronto, accompanied by the city engineer, will go to Europe soon for information regarding the construction of sewers.

EIGHTEEN medical students from McGill University are making their way to the Paris Exposition by taking care of cattle on the *Lake Huron*.

THE McKAY bill, previously discussed in these columns, has been withdrawn from the local legislature.

DR. P. A. McLENNAN, Nelson, B. C., has been appointed public vaccinator for the Kootenay districts, with power to perform vaccination on all school children.

THE SMALLPOX outbreak in Winnipeg has extended to twelve cases. Four nurses of the General Hospital are down with the disease and another death has occurred.

AT THE coming meeting of the Ontario Medical Association, June 6 and 7, Dr. Lewellys Barker, of Chicago, will deliver the address in medicine, and Dr. Luke Teskey, the address in surgery.

THE PROVINCIAL Board of Health of Manitoba has issued a circular letter to the press dealing with the benefits of vaccination. The city officer of Montreal has also had published a decision of a U. S. judge on the same question.

DR. FARRELL, Halifax, has issued a warning to the citizens of that city who are moving at this time of the year, to the effect that tenants should see that all apartment houses and other residences have been thoroughly disinfected and especially should this precaution be taken where consumptives have been the previous occupants.

MEDICAL ALLIANCE OF AMERICA.

The *Canada Gazette* contains the notice of the incorporation of this institution. It emanates from Montreal and is composed of citizens of that city. Full particulars appeared in THE JOURNAL early last fall, but this may be given as additional information. The company is a limited one with a capital of $100,000, in $10 shares. Among other powers bestowed, the following is granted: "To negotiate and arrange agreements and contracts between physicians, surgeons, pharmacists, nurses and the like, whose profession or calling is to care for and attend the sick, injured or infirm on the one hand, and such persons as desire these services on the other hand, whereby the latter shall be attended, treated and cared for by the former in return for a fixed fee or subscription, payable weekly or otherwise, to be collected and paid by said proposed corporation."

TRAUMATIC ORIGIN OF CANCERS—A MEDICOLEGAL CASE.

A case which has caused much talk among the profession in Toronto has just been concluded here in the courts of law. About the middle of last December, a traveler was walking to his home and carrying two heavy valises. He slipped, and in the attempt to recover himself, it is alleged that one of the

valises was thrown against the region of his liver with some violence. About the beginning of January the man went on a business trip to the maritime provinces, not having suffered much from the accident, but still not being in good health. He returned early in February, when his physician counseled an exploratory incision. This was performed, and it was found that he was suffering from a severe cancer of the liver. The incision was immediately closed, and two days later the man died. Dr. H. B. Anderson performed a post-mortem and found that the liver was greatly involved with cancer, and that there was also a nodule in the head of the pancreas. Nothing was found in any other part of the body. The traveler carried an insurance (accident) policy for $5000, and the company refusing to entertain the claim; suit was brought for the recovery thereof, and a goodly number of the city physicians were summoned to give expert evidence, *pro* and *con*. It turned out that that part of the liver adjacent to the supposed injury was entirely free from the disease, and also that a doctor out of town had examined the man two or three months before the alleged injury and had diagnosed cancer of the liver. The action was dismissed.

ASSOCIATION OF TRAINED NURSES.

A bill was recently introduced into the Dominion Parliament by Dr. Roddick, on behalf of nurses of Montreal, who sought to obtain legislation toward the formation of a Canadian nurses' association. Opposition developed which was ultimately successful in forcing the withdrawal of the measure. The powers sought by this "association" were both extensive and unlimited so far as the Dominion was concerned, and the latter was the chief, though not the only, objection to the bill. J. Ross Robertson, M. P., chairman of the Board of Trustees of the Victoria Hospital for Sick Children, Toronto, took an active part in opposing the measure, and it was through his energy and representations to Dr. Roddick that the latter concluded to withdraw the bill. The introduction of the measure has, however, accomplished good, for it has laid the foundation for the formation of a trained nurses' association for the entire Dominion. The membership of this will include the woman superintendents of all the hospitals of Canada, together with the alumnæ of each training school. The hospital authorities of the following cities have already given their support to the scheme: Vancouver, Winnipeg, London, Hamilton, Toronto, Kingston, Montreal, Ottawa, St. John and Halifax. It is understood that in the formation of this society Dr. Roddick will give hearty co-operation.

SAMARITAN HOSPITAL, MONTREAL.

The annual meeting of the above institution for women was held last week and the results show that the hospital is in a very satisfactory condition. The surgeon-in-chief, Dr. A. Lapthorn Smith, read his report for the year. During the 5½ years since the hospital was founded, there has been each year a very substantial growth, while the past one has been the most active in the whole history of the institution: 124 patients have been under treatment, as compared with 101 last year, an increase of 23 per cent.; 41 of this number suffered from tumors or other forms of abdominal disease, requiring abdominal section for their cure. Of these 41 women, none died in the hospital, but 2 with hopeless cases of cancer died two weeks after return to their homes. There were 95 other gynecologic operations for inflammations, lacerations, cancer, etc., and 24 received only medical treatment. Three deaths occurred in the hospital during the year, but not one from the 41 major operations. In addition, in the out-door department, 150 patients were treated, 23 of these were admitted to the wards. Thus 274 patients have been cared for during the year, and 1310 since the hospital began its work. The receipts for the year amounted to $3086 and the disbursements $2696. It is altogether likely that a new building will shortly be erected. Dr. A. Lapthorn Smith was re-elected surgeon-in-chief, and Sir Wm. Hingston consulting surgeon. Sir James Grant and Dr. F. W. Campbell were elected consulting physicians.

RECENT MEDICAL LEGISLATION IN NOVA SCOTIA.

Three acts of importance to the medical profession in the province of Nova Scotia passed the legislature at its recent sitting: An act to amend the public health act; one to establish a provincial sanatorium for the treatment and care of persons suffering from tubercular disease of the lungs, and a third, introduced by Dr. Kendall, which aimed to remedy the abuses associated with medical attendance on employees of collieries and manufacturing companies. The act regarding the public health of the province provides for the appointment of county medical health officers, who shall be duly qualified practitioners. As noted in THE JOURNAL last fall, Nova Scotia was far behind the times in this respect. These appointments are to be for one year, the appointee to be paid a salary of not less than $100. The act also sets forth at considerable length the duties required of these officers. Nova Scotia is the first province in the Dominion to set apart an allowance for the erection of a state sanatorium for consumptives; and the $15,000 provided for this purpose speaks well, when it is remembered that the Ontario legislators voted, at their recent session, only $4000, to enable municipalities to carry on this work. Clause (*h*) of the act is: "To pay to any municipal or civic body, corporation, private person or benevolent organization maintaining and conducting a sanatorium within the province for the treatment and care of persons suffering from tubercular disease of the lungs, a sum not to exceed 30 cents per day for not more than 100 days that each patient may be in actual attendance and under treatment at such sanatorium."

Correspondence.

Medicine in the Far East.

VIENNA, AUSTRIA, April 13, 1900.

LUCKNOW.

To the Editor: I found rather "short picking" as far as medicine is concerned, in Lucknow. There is a special hospital there for lying-in and gynecologic cases, but as everywhere in India women have a deep-rooted prejudice against allowing men to examine or treat them; they are very generally cared for by an inexperienced female.

By a visit to King's Hospital, I made the acquaintance of Dr. Raham Khan Bahadur, a native physician of wide reputation, and especially noted as an operator for cataract. The Doctor has done over 7000 operations of this kind, after a manner that he claims is practiced only by himself. He uses pure cocain in powder, to render the eye insensible. He makes the usual incision before his extraction, but uses no eye speculum, and does not fix the eye with forceps while operating. After the incision is made, he uses a small ring-shaped instrument to press out the lens, but makes his pressure on the outside of the eyelid. The room that he operated in opened out on a dirty street; the air was full of dust, and he failed to wash his hands before beginning to operate, though he took the precaution to dip his instruments into hot water before using them. In spite of all this his results seemed to be excellent. The Doctor, like the other physicians whom I met in India, has a general practice. I saw a few patients with typhoid fever in his wards, all white men; in fact, every white man he had in his service had this disease, while among the natives, who out-numbered the whites twenty to one, there was not a case. In the management of enteric fever the Doctor has a hobby, i. e., the restriction of the diet of his patients. He claims that overfeeding is responsible for a large amount of the mortality in this complaint. He gives his patients only sterilized milk, and limits the quantity of this to from 1½ to 2 pints in the twenty-four hours. As to medication, he is entirely indifferent, but washes out the entire lower bowel by free injections of tepid water once in twenty-four hours.

AGRA.

I visited the Civil Hospital of this place, under the charge of Dr. Anderson, in whom I found one of the best all-around men.

He is a living refutation of the idea that for thorough efficiency in the practice of medicine it is necessary to divide it into an infinite number of specialties. I saw him do, in one forenoon, a half dozen cataract operations, with marked skill, and he crushed a stone in the bladder with a dexterity that I have seldom seen excelled. He also operated for hemor-

rhoids and amputated a forearm in a manner that would do credit to any general surgeon. Besides all this, I visited, with him, his wards that contained nonsurgical cases, and he examined and prescribed for these in a manner that showed him to be well up in internal medicine. The patients in this hospital were all natives, and bowel troubles and malarial complaints were the most widely prevalent diseases among them.

I saw swarms of rats running over the patients' beds and chasing each other about the floor. On asking the Doctor why he did not exterminate these pests, he told me that if he should kill or poison a single one every patient who could walk would abandon the ward at once. "These people," he said, "would divide their last grain of rice with a rat," and these little beasts were as tame as cats.

I visited also the prison hospital, where 2000 prisoners are confined, and the attending physician told me that during a service of ten years he had never had a case of typhoid fever under his care. Such is the willingness of the British authorities to pander to the religious prejudices of its Indian subjects, that three cooks are employed in this institution to prepare the food for the different sects into which the inmates are divided.

DELHI.

In this remote city of the Far East, I was surprised to find the table in the reading-room of my hotel covered with numbers of Dowie's *Leaves of Healing*. I looked these over with considerable interest, for the success of this man illustrates a phase of humanity that I have always studied with interest. This periodical, and the doctrines that it teaches, show into what absurdities mankind will drift in search of a religion to save their souls, or some therapeutic agent to heal their bodies. It most thoroughly illustrates "What fools we mortals be." Platform orators and writers for the press are wont to paint, in glowing terms, the intellectual progress that the race has made during the century just closed. Let, however, any cultivated man or woman, with a well-balanced mind, read this sheet of Dowie, study the absurd pretensions of the man, and consider the success that he has achieved in that great center of modern progress, Chicago, and I think he or she will lay it down with a mind full of pessimistic reflections, and a firm conviction that our race has a long journey yet before it ere it will have shaken off the shackles of ignorant fanaticism and freed itself from the power of designing mountebanks. In a single article in this periodical the term stinkpot is used a score of times. Yet this man who revels in such slang is looked upon by his followers as so near approaching the Divine that a god who is deaf to the entreaties of the noblest of our race hears him and does his bidding. In conversation with a prominent western lawyer, in regard to Dowie and his work, he said: "I had always been inclined to be a little agnostic, but had never settled down into an attitude of absolute unbelief. Being in Chicago over Sunday I went to hear Dowie, and after listening to him for an hour and a half, I left the hall where he spoke fuller of doubts than I had ever been before in my life, and I have ever since been a firmer believer in agnosticism than I had ever been before." Ingersoll is dead, Dowie is the best man living for the propagation of his tenets, and the confirmation of thinking men in their doubts as to the Divine authenticity of the Bible.

JEYPORE.

I visited the Mayo Hospital, in this city, an institution containing 209 beds, under the charge of Dr. Pank, an up-to-date Englishman. Like Dr. Anderson of Agra, I found him doing all kinds of work, and that, too, in a most satisfactory manner. Jeypore is the capital of the native state of Rajputana, and the ruling Maharaja is a liberal-minded ruler, and furnishes Dr. Pank with unlimited funds to keep up this hospital.

The patients in the wards devoted to internal medicine were largely those in whom malaria and its complications played the most important role. I saw a large number with spleens that filled the entire abdominal cavity. Dr. P. told me that this disease kills more people in India than all others combined, the plague and cholera not excepted. He treats these cases by the administration of large doses of the iodid of arsenic, together with 3 grains of quinin three times a day. I traveled 2000 miles over the dry plains of India, where for nearly two years not a drop of rain had fallen, and where men and beasts were dying by the thousands on account of this drouth, yet if this dry crust of earth on top be disturbed and the underlying soil exposed there emanates from it a malarial poison, the influence of which the oldest resident can not withstand. Dr. Pank confirmed the opinion I have so often heard expressed by physicians in India, that the natives never have typhoid fever. Pneumonia is very prevalent in Jeypore during the winter months, and the natives, who are nearly all illy nourished, fall ready victims to its ravages; 60 per cent. of those attacked die.

It seems that at Colombo, Madras, Calcutta and Bombay, each of which is located near the sea-level, and where the temperature is nearly uniform during the entire year, pneumonia scarcely ever prevails and articular rheumatism is a rarity. However, at Jeypore, where the altitude is considerable and where the nights are cool, the former disease is very prevalent. Its treatment is entirely of a supportive character, consisting of the administration of the tincture of bark and the carbonate of ammonia. I saw the Doctor treat several cases of lupus, by first curetting the diseased surface and then sprinkling antipyrin over it in the form of a powder, and applying over this an adhesive strap to keep it in place. He claims that in his hands this treatment has been eminently satisfactory.

At my first visit to the Mayo Hospital Dr. Pank began his forenoon's surgical work by operating on four patients for cataract, and two for stone in the bladder. In operating for stone the Doctor crushes everything. If the stone be too large to be caught in the jaws of the lithotrite, or too hard to be crushed by that instrument, he makes a perineal incision, not for the purpose of removing the stone in its entirety, but to introduce a powerful crusher, and after the stone is crushed, the fragments are washed out, both by the perineal opening and by the urethra.

The earth-closet system of the disposition of the excreta of the patients in the hospitals in the interior of India is the one generally adopted, and as the dry earth is abundant, and is changed often, the system seems to work well. Jeypore was the first great famine center that I struck in my tour through India. In the Mayo Hospital grounds long rows of temporary rice-straw sheds were erected, where nearly a thousand women and children were being housed and fed, their husbands and fathers working on public works in the vicinity. Many of these, especially the children, presented a most sorrowful aspect. Starvation among them carried with it a train of morbid phenomena to which many of these poor creatures succumb, even after they have an abundant supply of food. A catarrh of the whole alimentary tract affected a good many of the children, and in their emaciated condition nothing seemed to arrest it. Two score years devoted to the practice of medicine ought to school a man to the sight of human misery and suffering, yet in famine-stricken Jeypore I witnessed scenes against which my blunted sensibilities turned away with horror and disgust. For instance, a woman with a child just born, naked and unwashed, paraded herself before me, exhibited her withered, skinny breast, telling me that as she had no food to eat, she could not give milk to nourish her child. Then came a nearly nude skeleton of a man carrying in his arms a dead child, and he recounted with tears in his eyes that the infant he carried was the last of his family to die of starvation, and he would soon follow them to the grave unless I gave him money to buy food.

M. S. CALDWELL, M.D.

The Mad-Stone.

PHILADELPHIA, April 11, 1900.

To the Editor:—A question in regard to the so-called "mad-stone," in THE JOURNAL of April 7, 1900, prompts me to reproduce from my notes on hydrophobia some facts in regard to this subject, as it is one about which much uncertainty prevails.

One of the earliest descriptions of such a thing is that attributed to Abbé Grosier, in his "Description of the Chinese." He there gives an account of the use of a stone called the ser-

pent-stone in "Tang-King." This was applied, stuck fast, absorbed the poison, dropped off, and the patient was freed. The stone was washed in lime-water, dried and could then be used again.

In a work on hydrophobia, published in 1812, Dr. Thacher says: "There prevails a fanciful opinion among a certain class of people, that a celebrated substance, known by the name of snake-stone, possesses, intrinsically, the power of extracting the poison of a snake or mad dog from the human body; that when applied, the stone will adhere like a leech to the bitten part, nor loose its hold till its numerous pores are literally glutted with the liquid poison. A case intended to corroborate this doctrine is recorded by Mr. William H. Harding in the *Medical Repository*, Vol. 4, hex. 2. He relates that his child received a bite from a dog supposed to be affected with rabies. The snake-stone was applied (in due form and full faith no doubt) by which every particle of poison was extracted, and no ill consequences resulted from the accident. Dr. Mease has, in the Medical Museum (Vol. 5, p. 1) with his usual freedom and good sense, animadverted upon the unreasonable prejudice in favor of this popular but fallacious expedient. He informs us that in India such stones are very common, and the credulous natives believe, most firmly, in their preservative powers against the effects of the bites of venomous snakes. The author of the 'Wonders of Nature and Art,' says Dr. Mease, thus notices these stones in the account of Tonquin. 'Persons who happen to be bitten by serpents, press out the blood, and apply a small stone, called the serpent-stone, which is said to possess the miraculous power of drawing out the poison. When impregnated with the venom it drops off like a leech. It is then carefully washed with milk and water in which lime has been diluted, and on a second application to the wound, it exhales all the virus so completely, that in less than an hour, the patient becomes perfectly free from pain.' 'Two of these stones,' adds Dr. M. 'are in the cabinet of the Philosophical Society, and another one is in my possession, all of which were brought last year by a gentleman from India. They are rather more than an inch long, and about five-sixteenths of an inch broad, of a bluish or slaty color and flattish shape.'" [Pp. 204-206.]

In 1801 Dr. Samuel Davis, of Petersburg, Va., wrote a letter to Dr. Benjamin Rush, which has never been published, but which is preserved in the Ridgway Branch of the Philadelphia Library. In this letter he describes a mad-stone which emitted bubbles when put in water after the application, and this was taken to be evidence that it had extracted the poison from the bite. The owner of this stone refused an offer of 300 guineas for it, a very large sum of money at that time. It was yellow, light and had many black pores. It had been given to the owner by a stranger who had been sick and cared for. It was wrapped in a printed paper, which declared "Francis Torres, a Native of France, is in possession of a chymical preparation, called a Chinese snake-stone, which will extract the poison of the bite of snakes, spiders, and of a mad dog and will cure cancers, which are sold at half a Guinea for the small and a Guinea for the large ones." This was dated Charlestown, S. C., 1740.

Mad-stones seem to be of two sorts: 1, some porous form of calcareous rock, or, 2, a concretion found in the intestinal canal of herbivorous animals, in this being like the Bezoar stone which figured so largely in the pharmacopeias of one hundred and fifty or two hundred years ago; in fact, it seems as though the mad-stone was indeed in many cases the Bezoar stone, which, when it ceased to be used in internal medication, came to be applied externally. There have been a number of so-called mad-stones in different parts of this country, most of them in the South and Southwest. In one case, in Virginia, the owner of a mad-stone in 1885 believed that it was the "talisman" sent by the Sultan as a wedding present on the occasion of the marriage of the Earl of Huntington to Edith Plantagenet.

Serious writers usually treat the mad-stone as having no specific virtue, but serving as a means to calm the apprehensions of those who have been bitten by rabid animals. I quite agree in this opinion, but am assured from my long-continued investigations of the subject of hydrophobia that in this respect it is not really inferior to some other modes of preventive treatment which have obtained the approval and support of men whose distinction in medicine is far greater than their industry in critically investigating the real worth of prophylactic measures which present themselves, with a pretentious air of scientific accuracy.

CHARLES W. DULLES, M.D.

4101 Walnut Street.

Division of Fees.

CHICAGO, April 29, 1900.

To the Editor:—For some time the surgeon and specialist have been giving their opinions as to the demands for fees and their division between the general practitioner and the operator. The view taken by the majority of specialists, that division of fees is dishonest and does the patient an injustice looks well in print and reads as though it were necessary for the specialist to guide the physician and correct his dishonest, grasping hand.

This controversy has been one-sided. And to show where the corruption is to be found I will state my own personal experience with the specialist. Within the last three years I have been approached by no less than three of the prominent and leading surgeons of Chicago who, openly and of their own free will, made these propositions to me: One said he would be pleased to do all my surgical work and give me 50 per cent. of his fees from all patients I sent him. Another said he would do the square thing and give me 33 per cent. The third, and not the least, so far as his reputation as an operator and writer, offered me 50 per cent. of all fees. These same specialists have given their opinion freely at medical meetings, denounced the general practitioner and placed him alongside the crook. If all surgeons and specialists who have been so free to denounce the practice are playing the double game it is time to correct the would-be honest surgeon and place him where he should be. For my part I think he has played the part of the wolf long enough. I feel sure that I am not the only physician doing general work who has had such propositions.

LEWIS S. EASTLAKE, M.D.

Castor-Oil in Neuralgia.

NEW YORK CITY, April 26, 1900.

To the Editor:—In the discussion on castor-oil in the treatment of neuralgia, I note (see THE JOURNAL of April 21, p. 982) that Dr. Paddock is troubled to know how the oil can be given, while Dr. Fütterer tells of giving it with alcoholics that may in some degree interfere with its usefulness; and Dr. Hirst is quoted as advising that it be given in *warm* milk, while the question is raised as to how warm milk disguises the taste of the oil.

Some fifteen years ago I not only gave to the profession the fact that *cold* milk is the best of all vehicles in which to administer both castor-oil and cod-liver oil, but also pointed out the method of administration with the reasons for the method used.

Milk, like these two oils, is an oil or, more properly speaking, an emulsion—and just here let me say that it is Nature's emulsion and, in a very short time, when allowed to stand, it separates, hence the uselessness of all emulsions made by men, for all separate and are a snare and a delusion. Few if any of the emulsions contain the amount of oil that is claimed for them, hence the stomach tolerates the *supposed* amount of oil better than the amount given when we measure out the oil ourselves.

The method I gave is this: fill the mouth with milk and hold it there; dip up a tablespoonful of milk and pour into this spoon—already full of milk—about a teaspoonful of oil; whether cod-liver oil or castor-oil, you will see that it displaces milk to the extent of its bulk, as any other liquid would do, but the globules of either of these oils, being different from the gobules in milk, do not mix with the latter, and the oil will be in a round ball, not touching the spoon. As you swallow the milk that has been held in the mouth, take the spoonful of milk in the mouth and at once begin to drink milk from a cup at hand. I have never yet found the person who, if the procedure

was carried through in this manner, could tell whether he had taken castor-oil or cod-liver oil, or taken none at all. There is absolutely no contact with the mouth or throat, of any particle of the oil, nor can it be smelled on the spoon. All this implies taking immediately, but not with undue haste.

The oils as well as the milk must be cold and the colder the better. The quantity can be increased by degrees as the stomach will stand the oil desired, but if a large dose of castor-oil is desired, it can be given better by repeating the procedure than by attempting to swallow too much at one time.

This procedure has given me and so many of my patients, especially parents when administering oils to children, so much comfort that I repeat what I wrote over fifteen years ago, hoping others who do not seem to have heard of it in detail may also find relief from the nauseous taste that so many dread.

Yours respectfully,

WICKES WASHBURN, M.D.

Association News.

The Official Program.—In order to avoid misunderstandings and to protect the interests of advertisers, attention is called to the fact that there is but one official program. This program is copyrighted by the Board of Trustees and contains no advertising matter.

Delegates to the Meeting of the American Medical Association.—Secretaries of societies are requested to forward the names of delegates as soon as possible after these are appointed or elected. George H. Simmons, M.D., Secretary, 61 Market St., Chicago.

General Business Committee.—The first meeting of the General Business Committee of the AMERICAN MEDICAL ASSOCIATION will be held at the Hotel Dennis, Atlantic City, N.J., on Monday afternoon, June 4, at 4:30 o'clock. Subsequent meetings of the Committee will be held at the same place and hour, every afternoon, during the meeting of the ASSOCIATION, unless otherwise directed by the Committee. In order that the business of the ASSOCIATION may be effectively transacted, it is very important that all the members of the Committee should attend all its meetings. L. DUNCAN BULKLEY, Acting Secretary.

Entertainment of Members of the Association.—The Directors of the Philadelphia County Medical Society, aware of the large number of physicians who will pass through Philadelphia on their way to and from the meeting of the AMERICAN MEDICAL ASSOCIATION, to be held at Atlantic City, N. J., June 5 to 8, and desirous of affording them an opportunity to visit the various hospitals and scientific institutions of Philadelphia, and to witness operations, etc., will establish a bureau of information for the furtherance of these objects. This will be at the College of Physicians of Philadelphia, northeast corner of Thirteenth and Locust Streets, the College having kindly placed a room in its hall at the disposal of the Philadelphia County Medical Society. This room will be in charge of a competent physician, and open from 10 a.m. until 5 p.m., daily except Sunday, from Monday, June 2, to Monday, June 11. Physicians are invited to make free use of the bureau, where they may obtain full information relative to the situation of the various hospitals, medical colleges, and other scientific institutions of Philadelphia, and to the time of operations and clinics at the different hospitals throughout the city. Information will be secured and tabulated daily, showing the leading attractions for that day. The College of Physicians of Philadelphia has also voted to extend to the members of the AMERICAN MEDICAL ASSOCIATION the courtesies of the library and of the Mütter museum. The library, which was founded in 1788, is, with the single exception of that of the surgeon-general's office in Washington, D. C., the largest collection of medical books in this country. The Mütter museum, which was endowed in 1856, by the late Prof. Thomas D. Mütter, contains about 4000 specimens of normal and pathologic anatomy, besides valuable models, casts, and illustrated anatomic works. Both the library and the museum will also be open from 10 a.m. to 5 p.m., daily except Sunday. Additional information may be secured by addressing the Bureau of Information, at the address above, from June 2 to 11, and prior to that time by addressing any of the directors of the Philadelphia County Medical Society, as follows: Drs. A. O. J. Kelly, Chairman, No. 1911 Pine Street, Chas. A. Oliver, John G. Clark, Addinell Hewson, or Emma Musson.

Deaths and Obituaries.

S. G. PLUMMER, M.D., Rock Island, Ill., died April 29, aged 79 years. He was born in Pennsylvania, received his early education in the Greenville (Pa.) Academy, and the Western Reserve College in Ohio. In 1856 he was graduated from the Cleveland Medical College, and in 1861 was made surgeon of the Thirteenth Ill. Vol. Inf., later appointed medical director of the First Division, Fifteenth Army Corps, and made its surgeon. Since the Civil War, he had practiced medicine in Rock Island, where he served on the medical staff of St. Anthony's Hospital. He was a member of the AMERICAN MEDICAL ASSOCIATION, the Illinois State Medical Society, and the Iowa and Illinois Central Medical Association.

M. M. BAGG, M.D., died May 2, in Utica, N. Y., aged 89 years. He studied in Hamilton College; in 1833 went to Yale, where he was graduated four years later, and in 1842 received his degree in medicine from the Geneva Medical College. After a year spent in Paris, he returned to Utica, where he had since practiced. He was a trustee of Faxton Hospital and a member of its board of physicians, was also on the consulting staff of St. Luke's Hospital and one of the visiting physicians to the Utica Orphan Asylum.

LEANDER H. BAKER, M.D., Louisville, (Ky.) Medical College, died May 4, of bronchitis, at his home in Oak Park, Ill. He practiced medicine in St. Louis, Mo., until the breaking out of the Civil War, when he was appointed surgeon of the Twenty-fourth Mo. Vol. Inf. In 1864 he located in Quincy, Ill., and from there went to Payson, Ill., thence to Oak Park.

JOHN STOCKTON HOUGH, M.D., a retired physician, died at his home in Ewing, near Trenton, N. J., May 6, aged 54 years. He was graduated from the Pennsylvania University's medical department, and had traveled extensively in Europe in the interest of his profession. He was also one of the best known men in New Jersey, a bibliographer possessed of a large library, and of late years was active in the movements for good roads. His death resulted from injuries received by having been thrown from his carriage a week previously.

RICHARD H. KEALHOFER, M.D., aged 50, died suddenly of heart disease, in Philadelphia, May 1. He was a resident of Hagerstown, Md., and had been on a trip to Atlantic City. Dr. Kealhofer was educated at Franklin and Marshall College, studied medicine with Dr. J. McPherson Scott, of Hagerstown, and received his degree at the University of Maryland in 1866. He practiced for a time in St. Louis, Mo.

BENJAMIN GERET, M.D., St. Charles, Mo., died May 3, aged 58 years. He was a native of Bavaria, and in 1868 was graduated from the Royal College of Medicine at Erlangen; later he was appointed a major-surgeon in the German army, and was decorated with high honors by both the king of Bavaria and the emperor of Germany.

G. R. C. TODD, M.D., a brother-in-law of Abraham Lincoln, and a surgeon in the Confederate Army during the Civil War, died at his home in Barnwell, S. C., April 25. He was graduated from the medical department of the Transylvania University, Lexington, Ky., in 1850.

CHARLES H. MESEREAU, M.D., College of Physicians and Surgeons, New York City, 1884, died of cardiac disease at his home in New York City, May 4, aged 37 years. For two years he was a house-surgeon in the Hartford (Conn.) Hospital, and was for several years a sanitary inspector of the New York Health Board.

JOHN P. LANDON, M.D., died at his home in Tilleride, Colo., recently. He was graduated from the Bellevue Hospital Medical College, New York City, in 1875, and practiced in Sterling, Ill., for a number of years before going West.

DAVID STOVEL, M.D., Detroit, Mich., died May 1, aged 61 years. He was born in Mount Forest, Ont., and graduated first from the Toronto College of Medicine, then from the Detroit College of Medicine.

EDWARD LYON, M.D., a graduate of the medical department of the University of Pennsylvania, class of 1867, died recently at his home in Williamsport, Pa.

W. N. ROGERS, M.D., of Waco, Texas, died May 1. He graduated from the Louisville Medical College in 1878, and practiced in Belton, Texas, until four years ago.

GEORGE FULMER, M.D., Jefferson Medical College, 1853, died in Mechanicsburg, Pa., May 1. He was a member of the AMERICAN MEDICAL ASSOCIATION and of the Medical Society of the State of Pennsylvania.

EDWARD PAYSON WILLIAMS, M.D., Atlantic City, N. J., died there April 29, aged 69 years. He was graduated in 1875, from the College of Physicians and Surgeons, New York City.

WM. E. H. BROWN, M.D., of Algiers, La., died April 23, aged 70 years.

Miscellany.

Food Poisoning at San Juan, Porto Rico.—On March 25, 1900, out of a company of ninety-four men of the Eleventh United States Infantry, forming part of the garrison of San Juan, P. R., 57 were admitted to hospital and 10 became slightly sick, but did not apply for treatment. The symptoms were persistent vomiting, severe cramps in the stomach, purging, great prostration, dilatation of the pupils, headache, clammy perspiration, chilliness and great thirst. The stomach in each case was washed out by means of the stomach-tube. In some cases the stomach was empty and nothing but water and mucus came away; in others the washings were tinged with bile, and in others again a moderate amount of food that had been eaten for breakfast was washed out, but in no case was the stomach overdistended or even full. The vomiting was controlled in several instances by the washing out of the stomach, but in many it persisted for several hours afterward. The prostration was so great that some of the patients fainted before reaching the ward. A large number vomited blood in small clots, in most instances mixed with nothing but mucus, showing that the hemorrhage had not taken place until after the contents of the stomach had been expelled. Purging began in most before the vomiting had ceased, and continued for twelve to fifteen hours. At first the stools were natural, soon watery, afterward becoming mucous and blood-tinged. Cramps in the voluntary muscles were mild in some, but other patients writhed in agony, their sufferings being relieved only after thorough kneading and massage by the hospital attendants. Forty were discharged on the following morning; the others from day to day until the fifth morning, when all were returned to duty.

A careful study of the food eaten that morning led the surgeon in charge, Captain George M. Wells, assistant-sugeon, U. S. A., to refer this general attack to the milk used with the mush furnished for breakfast. This meal consisted of hash made from meat and potatoes, which had been baked in the oven for two hours prior to being served; mush made from the corn-meal of the subsistence department and served with diluted condensed milk of the Eagle brand; bread, coffee and sugar, but no cream. The evidence seemed to point to the condensed milk as the ingredient of the food containing the poison.

Sanitary Progress in Porto Rico.—General Orders, No. 69, April 2, 1900, Headquarters Department of Porto Rico, prescribes regulation for the establishment and care of cemeteries, public and private. So far as relates to public cemeteries, it is required that on or before June 30, 1900, each municipality shall provide within its limits at least one civil cemetery, which shall be available for the burial of all who die in the municipality. Graves or lots in such cemeteries may be sold for the interment of the remains of individuals or families, but a sufficient area must be set apart for the free and proper burial of the remains of the poor and friendless. All interments in, or disturbance of, the soil of any cemetery now in use, after the above-mentioned date, are prohibited, provided, however, that the alcalde of any municipality may submit evidence to show, as respects any cemetery in his municipal district, that there is a space in a designated one available for burials, and that interments may be made in such space without disturbing the remains of others previously buried therein. This proof will be forwarded to the military governor, and if, after investigation by the Superior Board of Health, the facts as claimed shall be established a special exception will be made in the case of the cemetery in question.

General Orders, No. 74, April 7, 1900, establishes a board of charities in each municipality, to consist of three members to be selected by the alcalde, with the approval of the municipal council, on account of their special fitness for organizing and supervising charitable work. All matters respecting municipal charitable institutions, including homes, asylums and hospitals wholly maintained from public funds and intended for the care of the destitute, sick or incurables, the nomination of destitute children for admission to the insular charity schools, and matters relating to the improvement of the state of the poor and distressed in general are submitted to this board.

Again, No. 78 of the series of General Orders, dated April 10, 1900, provides for the appointment in each municipality of a competent inspector of cattle and meat, to be appointed by the municipal council and paid from the municipal funds. When sick animals or those suffering from sores or wounds are offered for slaughter, for human consumption, the inspector will forbid the slaughter. Meat which has not been inspected, approved and duly tagged by the authorized inspector will not be sold for human food. The flesh of animals suffering from tuberculosis, fever, actinomycosis, glanders, cancer, hydrophobia, eruptive skin disease, measles and cholera (in hogs), and of those which have died natural deaths, is especially unfit for human food and must be condemned. No animal over six months pregnant shall be slaughtered for food, and the number of cows shall not exceed one-fourth of the total number of cattle butchered. The district courts have jurisdiction in cases of violation of the provisions of this order.

Lastly, Circular No. 16, dated April 9, from the same headquarters, publishes rules and regulations respecting burials, disinterments and transportation of human bodies.

The Prognosis of Appendicitis.—For a time discussion raged warmly around the question as to the indications for operation in cases of appendicitis, and while it can not be said that a final decision has been reached, there is a growing tendency to operate early and to operate often. There are not many who to-day consider appendicitis a medical disorder exclusively, but the condition is rather looked upon as a borderline affection in whose management the surgeon should be consulted from the outset, in order that, should his opinion be desired, he can give it intelligently, and should operation be required, he can perform it promptly. The general proposition that successful treatment demands early and accurate diagnosis is especially applicable here, but even under the most favorable circumstances it will be difficult, if at all possible, to determine the character of the disease, the nature of the infection, the intensity of the morbid process, and the quality and the extent of the lesions. The prognosis will depend on all of these factors and this aspect of the subject is given careful consideration in a recent communication by Caley (*The Lancet*, February 10, p. 378), based on observation of 200 cases of appendicitis. Of this number 98 were treated in the medical wards, with 3 deaths, and 102 in the surgical, with 22 deaths. The low mortality among the medical cases is attributed to the large proportion of simple ones and the high mortality among the surgical to the large proportion with general peritonitis.

The cases were divided into five groups: 1, simple appendicitis and perityphlitis, in which the inflammation was limited to the walls of the appendix or localized non-suppurative adhesive peritonitis developed; 2, appendicitis with localized suppuration; 3, appendicitis with diffuse peritonitis; 4, chronic and relapsing peritonitis; 5, appendicitis with special compli-

cations, such as intestinal obstruction, fecal fistula, suppurative pylephlebitis with portal or general pyemia, hepatic or subphrenic abscess, thrombosis of the iliac veins, pleurisy, pneumonia, parotitis and secondary hemorrhage.

From a pathologic point of view the prognosis will depend principally on the extent and the nature of the peritoneal infection—whether local or diffuse, suppurative or non-suppurative, of a mild or of a severe degree of virulence—and in less degree on the nature and the course of the lesion of the appendix—whether mild or severe, as measured by its infectivity. No certain data are available for determining the virulence of the infective micro-organisms, but the lesions may be considered as severe or mild accordingly as one or another of the following phenomena are present: Severe—1, perforation, whether from concretion, ulceration or gangrene; 2, gangrene, whether from interference with the blood-supply or from intense infectivity of the inflammation; 3, ulceration due to specific infections, e. g., tuberculosis, typhoid fever, dysentery or actinomycosis, the presence of concretions, or the result of intense inflammation; 4, concretion; and 5, suppuration within the appendix itself. Mild—1, simple inflammation—catarrhal or more correctly, "parietal" appendicitis—acute or chronic; 2, stenosis or obliteration of the lumen, which is frequently associated with; 3, cystic dilatation of the distal portion; 4, concretion without ulceration; 5, superficial ulceration, and 6, kinking, adhesion, volvulus or hypertrophy of the mucosa.

From the clinical point of view the prognosis depends on: 1, the local symptoms; 2, the general symptoms; 3, the local signs; and 4, the progress of the case. Of the local symptoms pain is one of the most constant, and its distribution, severity and character are of much significance. In mild cases it is localized to the right iliac fossa, whereas in perforative ones it is usually more sudden, more severe and more generalized. When associated with definite collapse it suggests perforation, rupture of adhesions or rapidly spreading peritoneal infection. It may at first be dull and aching or slight and colicky—from inflammation of the appendix—and followed by a sudden increase in severity, with vomiting and general disturbance—from inflammation of the surrounding peritoneum, or extension of peritonitis, or rupture of an encysted abscess. In mild cases the pain tends soon to become localized and less intense. If persistent and severe it generally indicates a severe lesion. If it is also radiating it indicates extension of peritonitis; if persistent, severe and local, it is indicative of a concretion: if increased by deep respiration, it indicates considerable local peritonitis; as does also pain or difficulty in micturition. It should not be forgotten, however, that a severe lesion may be attended with little pain.

Vomiting, if present, usually accompanies or follows the pain, although it sometimes precedes. If frequent and severe, and especially if persistent, it indicates a severe lesion, as it does also when it occurs after a period of comparative repose. If it is sterocoraceous or coffee-grounds in character, it is of serious import. Absence of vomiting, however, is inconclusive. Other things being equal, natural action of the bowels is a favorable sign. Hiccough, especially if persistent, is of unfavorable omen.

Among the general symptoms the temperature, pulse and respiration conjointly and the aspect and the general condition of the patient with especial reference to collapse or anything approaching it, restlessness or general distress, are reliable guides in determining the effect of the local lesion on the organism as a whole. The temperature may be subnormal in the initial collapse of acute perforative or gangrenous appendicitis, fully developed septic peritonitis, localized circumscribed suppuration, mild appendicitis without appreciable local peritonitis. High fever of a continued type in the first two or three days is generally indicative of a severely infective lesion. A decline in temperature with a reduction in pulse, frequency and improvement in the general condition is usually reassuring. A secondary rise of temperature after the first few days is indicative of spreading peritonitis, suppuration or intercurrent complication, while fever persisting after eight or ten days is generally indicative of local abscess. A high pulse-rate is suggestive of a severe lesion, and in particular diffuse peritoneal infection, especially if the pulse-frequency is disproportionate to the temperature. Frequent and shallow respiration of costal type, with low temperature and pulse-rate, suggests grave peritoneal implication.

A pinched and anxious expression, restlessness, obvious distress and collapse indicate peritoneal shock or general peritonitis. The initial collapse that marks the onset of perforative appendicitis is significant. More or less persistent collapse is of the worst possible omen.

The local signs include impaired mobility during respiration and distension, tenderness, muscular rigidity, tumor or deep-seated resistance. Local immobility is the rule in cases of appendicitis with localized peritonitis. General immobility, except of diaphragmatic origin, is indicative of diffuse peritonitis. The area of local tenderness is proportionate to the extent of the local inflammation. Muscular rigidity corresponds with cutaneous hyperesthesia and tenderness. Local tumor or deep-seated resistance and dulness on percussion are common but not invariable. Their absence may be of serious prognostic significance and their presence reassuring.

The progress of the case during twenty-four, thirty-six and forty-eight hours may furnish a needed indication in prognosis and treatment. In mild cases the symptoms recede or become localized, while in severe ones the symptoms persist or become intensified.

Recurrence may be expected in about one-third of all patients, usually within two years, and most commonly within one year of the first attack. In the presence of local suppuration the probability of recurrence is relatively slight. A mild first attack is frequently followed by recurrence. If the condition clears up slowly and local pain, tenderness or swelling persists for some time, the probability of a relapse sooner or later is great. If in the interval between attacks there is occasional pain or discomfort, with irregularity of the bowels and definite local tenderness or resistance, a chronic appendicitis probably exists, recognizable on palpation, with a chronic tendency to relapse so long as the appendicitis remains.

EXAMINATION QUESTIONS.

The Michigan State Board of Registration in Medicine, presented the following questions at a recent examination in the several subjects noted.

PUBLIC HEALTH LAWS AND HYGIENE.

1. Name the diseases dangerous to public health that must be reported to the Board of Health. 2. What restrictive measures should be adopted in an outbreak of smallpox? 3. Describe method of disinfection during and following a case of scarlet fever. 4. Nuisances: What constitutes a nuisance? How abated? 5. Milk: Dangers from impure milk? How adulterated? What is the legal standard in Michigan? 6. What preventive measures should be adopted in typhoid fever? 7. Number of cubic feet of air that should be provided in schools for each pupil. 8. Name some of the impurities in drinking water. 9. State Board of Health: Number of? How appointed? Their powers? 10. Local Boards of Health: Who are they under? The general law in townships? In cities and villages?

OBSTETRICS.

1. Name four of the most important signs or symptoms of pregnancy. 2. What are the disorders resulting from the mechanical interference of the gravid uterus. 3. Give causes and symptoms of puerperal eclampsia. 4. Define the terms abortion, miscarriage and premature labor. 5. Define accidental hemorrhage. 6. Placenta previa—diagnosis and prognosis. 7. Describe the stages of labor. 8. Describe the terms presentation and position. 9. What should an obstetric bag contain.

MINOR SURGERY.

1. Describe the process of applying a plaster of paris jacket. 2. Name ten important agents used as germicides. 3. Describe preparation for aseptic operation: *a*, Surgeon and assistants; *b*, patient; *c*, instruments. 4. Define anesthesia and name two local anesthetics. 5. Give principal differences in effects of chloroform and ether. 6. What is an aneurysm? 7. Give eight methods of controlling hemorrhage. 8. Describe: 1, compound fracture; 2, simple; 3, comminuted. 9. Describe Colles' fracture, and how would you dress it? 10. Describe Pott's fracture.

EYE AND EAR.

1. Briefly describe the anatomy of the eye. 2. What symptoms are diagnostic of conjunctivitis? 3. Describe keratitis, and state in a general way its treatment. 4. How would you diagnose cataract? 5. What do you understand by the terms hypermetropia, myopia, astigmatism. 6. What treatment do you recommend in cases of ophthalmia neonatorum—in what way can you prevent its occurrence? 7. What is the treatment for acute periostitis of the mastoid process? 8. In what way is air admitted to the middle ear? 9. Are growths and obstructions within the nose apt to cause deafness? If so, how? 10. How would you remove foreign bodies from the auditory canal?

CHEMISTRY.

1. What is chemistry? 2. What are the several divisions of the science? 3. What is a chemical element? Mention five. 4. What is a molecule, as recognized in chemical science? 5. What is an atom as defined in chemistry? What is a chemical symbol? Name the symbols of five primary elements. 7. Write down the symbols of the following seven elements: oxygen, hydrogen, iron, copper, sulphur, carbon, calcium. 8. How do you designate the atomic proportion of a compound? 9. What name is applied to designate a compound having an alkaline base with an acid adjunct? Give three examples. 10. What division of chemical combinations—organic and inorganic—is the more complex? Write the names of three formulas of great complexity.

BACTERIOLOGY.

1. Define microbes, coccus, bacillus. 2. Define streptococcus, staphylococcus, sarcina. 3. Give method of sterilization by heat; by chemicals. 4. Define sterilization, disinfection, deodorization. 5. Give method of staining bacilli tuberculosis in sputum. Give method of staining gonococci. 7. Name three culture-media. 8. How would you diagnose diphtheria bacteriologically—name and describe germ. 9. What microbes are the ordinary pus producers? 10. Give principal sources of typhoid bacillus—in what media is it oftenest found?

HISTOLOGY.

1. Define histology. 2. Give histology of bone. 3. Describe structure of liver and give blood supply. 4. Give list of principal tissues which compose the body; subdivisions of same. 5. Briefly describe voluntary and involuntary muscle. *a*, What principal difference between them? *b*, Which is found in mucous membrane of intestinal canal? 6. Give structure of arteries. 7. Describe a primary cell. 8. Give general structure of skin. 9. Give structure of the blood. 10. Give structure of lymphatic gland.

DESCRIPTIVE ANATOMY.

1. Describe the growth, and name the principal parts of the ulna. 2. Name five muscles of the face, and their actions. 3. Name the organs, principal and accessory, included in the alimentary canal. 4. Name, and briefly describe, the serous membranes. 5. Define the structures of the wall of the intestines. 6. Describe the pneumogastric nerve, its origin, distributions, and functions. 7. What kind of blood is found in the: *a*, pulmonary artery; *b*, renal artery; *c*, hepatic artery? 8. Name ten nerve-plexuses. 9. About what proportion of the human body is blood? 10. Describe the tonsil.

SURGICAL ANATOMY.

1. What structures are encountered in operating for an inguinal hernia? 2. Name the parts involved in a dislocation of the elbow. 3. Outline the apex of the heart, and aortic valve, on the chest wall. 4. What organs can be palpated by digital examination of the rectum? 5. Differentiate between the anterior and posterior fontanelles.

GYNECOLOGY.

Describe the following diseases:

1. Amenorrhea—etiology; treatment. 2. Dysmenorrhea—etiology; treatment. 3. Metritis—etiology; treatment. 4. Sterility—etiology; treatment. 5. Uterine colic—etiology; treatment. 6. Peritonitis (pelvic)—etiology; diagnosis; treatment. 7. Ovaritis—etiology; diagnosis; treatment. 8. Albuminuria in pregnancy—etiology; diagnosis; treatment. 9. Chorea during pregnancy—etiology; diagnosis; treatment. 10. Pelvic cellulitis—etiology; diagnosis; treatment.

MENTAL AND NERVOUS DISEASES.

1. Briefly outline the chief symptoms of brain tumor. 2. Give the different forms of epilepsy. Give the symptoms of apoplexy. 4. In what part of the brain is rupture of the blood-vessel most frequently found? 5. How and where are tests made for reflex action? 6. Name some of the common forms of mental disease. 7. What is the difference between idiocy and imbecility? 8. Define chorea. At what age does it most frequently occur? 9. What is dementia? 10. Name some of the forms of insanity which require prompt treatment.

PRACTICE OF MEDICINE.

1. Describe three pathologic pulmonary sounds heard on auscultation, and give their significance in diagnosis. 2. Differentiate intestinal, uterine, and renal colic. 3. You are called in to see two patients, both of whom are vomiting frequently. In the one case you recognize the vomiting as due to acute indigestion; in the other, that it is due to deficient elimination of nitrogenized waste. Give the chief points that influence you in your diagnosis. Give treatment in each case. 4. Enumerate some of the diseases in which intestinal antisepsis is indicated, and state reasons for such treatment. 5. Give, briefly, the medicinal and dietetic treatment for cholera infantum. Differentiate between it and cholera morbus. 6. Write a formula for modified milk suitable for a normal child 3 months old. What quantity per twenty-four hours and how many feedings? 7. Give the medicinal and dietetic treatment of an attack of appendicitis. Differentiate the abdominal symptoms of the latter from the abdominal symptoms of: 1, enteric fever; 2 peritonitis; 3, intestinal colic; 4, intestinal obstruction. 8. Give differential diagnosis of uremia, epilepsy, hysteria, opium poisoning, and alcoholic coma. 9. Briefly describe the general management and treatment of membraneous croup. 10. Enumerate some of the diseases in which the nucleins and serums have been employed with success. Give physiologic action in such diseases.

GENERAL SURGERY.

1. Define inflammation. Give general principles for treatment. 2. Classify fractures. 3. What is the difference between asepsis and antisepsis? What is a disinfectant? 4. What is shock, and how would you treat it? 5. Give your treatment of early strangulated hernia—prognosis? 6. Give causes, diagnosis, prognosis and treatment of hemorrhoids. 7. Give cause, diagnosis, and treatment of empyema. 8. Describe McBurney's method of performing appendectomy, and give his method of locating the appendix. When should it be performed? 9. What are the indications for the removal of the mammary gland? 10. Give diagnosis and treatment of dislocation of bones.

PHYSIOLOGY.

1. Name the different secretions found in the alimentary canal, beginning at the mouth. 2. Describe the act of deglutition. 3. How are foods classified in relation to their uses in the body, and give the names that designate each class. 4. What are peptones, and how do they differ from other proteids? 5. What is the function of the lymphatic system? 6. What are some of the results of the failure of the lymphatics to perform their functions? 7. Beginning at the right auricle, follow the course of the blood until it reaches the aorta. 8. Describe the changes that take place in the blood during its passage through the capillaries of the lungs. 9. Describe the difference in the functions of an afferent nerve and an efferent nerve. 10. Explain the reason why the choroid coat of the eye is covered with dark pigment.

PATHOLOGY.

1. In a child 4 years old, with pneumonia, which is it more likely to be, croupous or catarrhal? Give reasons. 2. Define necrosis. Distinguish it from necrobiosis and gangrene. 3. Give, briefly, the pathologic condition of the lung in the different stages of fibrinous pneumonia. 4. Define a cyst. Give classification. 5. Hypertrophy: Is the term always correctly used, and if not, why? Mention some of the causes of hypertrophy and distinguish it from hyperplasia. 6. Give, briefly, the morbid anatomy of enteric fever. 7. Give the causes of convulsions in children. Wherein does the "nervous discharge which occurs in convulsions differ from that of ordinary epilepsy"? What part of the brain is involved, and what is the condition of the brain in the beginning of attack? 8. Discuss the pathologic condition known as leucocytosis. 9. Give an instance of an infiltration and a degeneration. Wherein do they differ? 10. State the pathologic conditions present in a case of chronic endometritis.

TOXICOLOGY.

1. What is the most frequent source—also give symptoms and treatment—of ptomain poisoning? 2. What would be your treatment in a case of poisoning from an acid? 3. What would be the symptoms, and what your treatment in a case of poisoning from strychnin? 4. Name two or more drugs known as depressants. 5. Name two or more drugs known as deliriants. 6. What are the symptoms, and how would you treat a case of poisoning from coal gas? 7. How would you treat a case of opium poisoning? 8. What are the symptoms of carbolic acid poisoning, and what would be the treatment? 9. Give symptoms of uremia. 10. Describe how you would conduct a post-mortem, in a case of suspected poisoning, if you expected to be called into court to give evidence.

SURGICAL PATHOLOGY.

1. Give pathology of gastric ulcer. 2. Give cause and pathology of gangrene. 3. Give pathology of psoas abscess. 4. Give pathology of acute synovitis in a strong, plethoric athlete, and dangers from fibrous deposits in the blood—with treatment. 5. Give pathology and treatment of septicemia.

MEDICAL JURISPRUDENCE.

1. What is the difference between character and reputation? 2. Define infanticide. 3. Define abortion. When is it not a crime? 4. Define lunacy. 5. Wherein does lunacy differ from idiocy? 6. Explain the difference between expert and ordinary testimony. 7. Under what circumstances is a physician excused from obeying a subpena? 8. Distinguish criminal malpractice from ordinary. 9. What is medical jurisprudence? 10. What collateral science in medicine is it that most requires study in cases of poisoning as pertinent to medical jurisprudence?

THERAPEUTICS.

1. Give principal use and dose of apomorphin. 2. Name five cardiac stimulants and dose of each. 3. Give doses of following: Dover's powder, tinct. nux vom., fl. ext. ergot, atropin, dilute HCl, chloral, phenacetin. 4. Write prescription for chronic constipation in adult. 5. Describe action of digitalis on heart; dose—tincture, fluid extract, infusion—in what condition of heart is digitalis especially useful? 6. Give relative dose of drug per mouth, rectum and hypodermically. 7. Define anthelmintic, emmenagogue, diaphoretic, soporific, emetic. Give example of each. 8. Give source of opium; therapy. Give two principal alkaloids of opium and dose of each. 9. What is an infusion, decoction, elixir, mixture, fluid extract, tincture? 10. What is strychnin? Give three conditions in which its use would be indicated. How would you treat a case of strychnin poisoning?

NEW PATENTS.

Patents of interest to physicians, April 17 to May 1.

647,551—Truss, John Brain, Bracebridge, Ont., Canada.
647,559—Producing ethylene gas, James A. Deuther, Buffalo, N. Y.
647,603—Sterilizer for surgical dressing, Theodore Y. Kinne, Paterson, N, J.
647,665—Abdominal bandage, Cornelia Lush, Jackson, Minn.
647,527—Invalid bed table, Wilhelm Schleuning, Freihung, Germany.
647,687—Electrotherapeutic device, Thomas W. Topham, New York City.
32,526—Design, Ozone generator, Henry E. Waite, New York City.
648,334—Hernial truss, Ashbel P. Marlow, St. Joseph, Mich.
647,935—Truss, Milton B. Belden, Jamestown, N. Y.
648,028—Device for preventing mouth-breathing, Josephus Hooper, Louisville, Ky.
648,173—Ophthalmometer, Emil B. Meyrowitz, New York City.
647,993—Making capsules, Johann Schmidt, Nuremberg, Germany.
648,368—Hernial truss, James M. Tarrant, Denver, Colo.
648,322—Making nitric acid, John F. White, Buffalo, N. Y.
32,566—Design, Pessary, Wm. Gagnier, Milwaukee, Wis.
32,565—Design, Mouthpiece for prevention of mouth-breathing, Josephus Hooper, Louisville, Ky.
648,374—Inhaler, Thomas N. Barnes, Weston, W. Va.
648,580—Making ethereal salt of formic acid, Auguste Behal, Paris.
648,389—Making acetone, Harry O. Chute, Deseronto, Ont., Canada.
648,656—Atomizer, Allen De Vilbiss, Toledo, Ohio.
648,660—X-ray apparatus, Reginald A. Fessenden, Allegheny, Pa.
648,764—Apparatus for producing ozone by electricity, Joshua H. Lamprey, London, England.
648,594—Wafer capsule, Karl Morstadt, Prague, Austria-Hungary.
648,673—Electrical apparatus for surgeons' use, Henry Schlesinger, New York City.

The Public Service.

ARMY CHANGES.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., April 28 to May 4, 1900, inclusive:

Charles H. Alden, colonel and asst.-surgeon-general, U. S. A., retired from active service April 28, 1900, by operation of law, under the provisions of an act of Congress, approved June 30, 1882.

James A. Alexander, acting asst.-surgeon, from Fort Fremont, S. C., to Tampa, Fla., and thence to Havana, Cuba, for duty in the Division of Cuba.

H. Eugene Allen, acting asst.-surgeon, from Chicago, Ill., to duty in the Department of Texas.

Charles Bruning, acting asst.-surgeon, from New Orleans, La., to Tampa, Fla., and thence to Havana, Cuba, for assignment to duty.

August von Clossman, acting asst.-surgeon, from St. Louis, Mo,, to duty at Jefferson Barracks, Mo.

Edward Everts, captain and asst.-surgeon, U. S. A., retired from active service as a major, April 28, 1900, having been found physically disqualified by reason of disability incident to the service.

Robert J. Gibson, major and surgeon, U. S. A., from the hospital ship *Missouri* to temporary duty in the Department of California.

William C. Gorgas, major and surgeon, U. S. A., from the department of Havana and Pinar del Rio, Cuba, to duty as chief surgeon, Division of Cuba.

Randell C. Stoney, acting asst.-surgeon, from temporary duty at the Presidio of San Francisco to duty in the Department of California.

Harrison W. Stuckey, acting asst.-surgeon, former orders, requiring him to accompany troops to Manila and report for duty in the Division of the Philippines, revoked.

Hedley V. Tweedie, acting asst.-surgeon, from Jackman, Me., to Seattle, Wash., for duty at Fort Egbert, Alaska, or other post, if deemed advisable.

Benjamin B. Warriner, acting asst.-surgeon, from Crewe, Va., to Fort Fremont, S. C., for post duty.

NAVY CHANGES.

Changes in the Medical Corps of the U. S. Navy for the week ended April 28, 1900.

P. A. Surgeon L. Morris detached from the *Brooklyn* and ordered to the *Baltimore*.

P. A. Surgeon J. Stoughton, detached from the *Bennington* and ordered to the *Castine*.

Asst.-Surgeon T. M. Lippitt, detached from the *Baltimore* and ordered to the *Oregon*.

Asst.-Surgeon J. C. Thompson, detached from the *Castine* and ordered to the *Bennington*.

Asst.-Surgeon A. G. Grunwell, detached from the *Yosemite* and ordered to the *Brooklyn*.

P. A. Surgeon J. F. Leys, detached from the *Essex* on reporting of relief, and ordered home and to wait orders.

Asst.-Surgeon C. H. DeLancy, detached from the *Amphitrite* and ordered to the *Essex*.

Asst.-Surgeon J. C. Thompson will return to the United States by the *Bennington*.

P. A. Surgeon A. Farenholt will return to the United States by the *Concord*.

P. A. Surgeon M. R. Piggott, from the naval academy and ordered to the *Chesapeake* same day.

Asst.-Surgeon K. Ohnesorg, detached from the naval academy and ordered to the *Newport* same day.

MARINE-HOSPITAL CHANGES.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended April 26, 1900.

Surgeon J. M. Gassaway leave of absence for 5 days from April 23, 1900, under the provisions of Par. 179, Regulations, M. H. S.

P. A. Surgeon C. P. Wertenbaker, detailed to represent the service at the meeting of the Association of Military Surgons of the United States at New York City, May 31 to June 2, 1900.

P. A. Surgeon W. G. Stimpson, granted leave of absence for ten days from April 28, 1900.

Asst.-Surgeon John McMullen, granted leave of absence for seven days: upon expiration of leave of absence to proceed to the Gulf Quarantine Station, Miss., and report to medical officer in command for temporary duty.

Asst.-Surgeon Joseph Goldberger, upon being relieved from duty at the Immigration Depot, New York City, to proceed to the Reedy Island Quarantine, Del., and report to the medical officer in command for duty and assignment to quarters.

Acting Asst.-Surgeon J. B. Eagleson, granted leave of absence for three days from May 8, 1900.

Acting Asst.-Surgeon J. C. Rodman granted leave of absence for four days from April 23, 1900.

Hospital Steward E. T. Olsen, upon being relieved from duty at Wilmington, N. C., to proceed to Mullet Key Detention Camp, Fla., for duty.

Hospital Stewart C. F. Crowley, to proceed to Wilmington, N. C., and report to the medical officer in command for duty and assignment to quarters.

PROMOTIONS.

P. A. Surgeons T. B. Perry, R. M. Woodward and G. T. Vaughan, commissioned as surgeons.

APPOINTMENTS.

Charles F. Crowley, of Nebraska, appointed junior hospital steward.

HEALTH REPORTS.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended May 5, 1900.

SMALLPOX—UNITED STATES.

Alabama: Mobile, April 14 to 28, 14 cases.
District of Columbia: Washington, April 21 to 28, 1 case.
Illinois: Chicago, April 21 to 28, 11 cases.
Kansas: Wichita, April 21 to 28, 8 cases.
Indiana: Evansville, April 21 to 28, 2 cases; Indianapolis, April 21 to 28, 7 cases.
Kentucky: Covington, April 21 to 28, 6 cases; Lexington, April 21 to 28, 1 case.
Louisiana: New Orleans, April 21 to 28, 43 cases, 25 deaths.
Massachusetts: Boston, April 21 to 28, 1 case.
Michigan: Detroit, April 21 to 28, 1 case; Grand Rapids, April 7 to 28, 1 case, 1 death.
Minnesota: Minneapolis, April 14 to 28, 47 cases, 1 death.
New York: New York, April 21 to 28, 2 cases.
Ohio: Cleveland, April 21 to 28, 12 cases.
Utah: Salt Lake City, April 21 to 28, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, April 1 to 7, 2 cases.
Belgium: Ghent, April 7 to 14, 2 cases.
Brazil: Rio de Janeiro, March 2 to 23, 42 deaths.
China: Hongkong, March 10 to 31, 10 cases, 5 deaths.
England: Liverpool, April 7 to 14, 9 cases, 2 deaths; London, April 7 to 14, 3 deaths.
Gibraltar: April 8 to 15, 4 cases.
Greece: Athens, April 7 to 14, 5 cases, 1 death.
India: Bombay, March 27 to April 3, 120 deaths; Calcutta, May 3 to 10, 10 deaths; Kurrachee, March 24 to April 1, 27 cases, 6 deaths.
Japan: Nagasaki, March 21 to 31, 1 case; Tamsui, February 22 to 28, 87 cases.
Mexico: Chihuahua, April 14 to 21, 2 deaths; Guadalajara, April 21, epidemic.
Russia: St. Petersburg, March 24 to April 17, 80 cases, 24 deaths.
Scotland: Glasgow, April 7 to 14, 1 case.
Spain: Madrid, April 1 to 7, 10 deaths; Valencia, April 14, 1 case and 1 death.
Straits Settlement: Singapore, March 19 to 26, 7 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro March 2 to 23, 104 cases, 50 deaths.
Colombia: Panama, April 10 to 24, 4 cases.
Costa Rica: Port Limon, April 21, 1 death.
Cuba: Neuvitas, April 24, 1 case.
Mexico: Vera Cruz, April 14 to 21, 3 deaths.
San Salvador: Livingston, April 11, epidemic.

CHOLERA.

India: Bombay, March 27 to April 3, 7 deaths; Calcutta, March 3 to 10, 74 deaths.

PLAGUE.

India: Bombay, March 27 to April 3, 685 deaths; Calcutta, March 3 to 10, 601 deaths; Kurrachee, March 24 to April 1, 248 cases, 166 deaths.
Japan: Tamsui, February 1 to 28, 47 cases, 38 deaths.

CHANGE OF ADDRESS.

Brown, G. R., from 49 W 5th St., Cincinnati, Ohio, to Pleasant Valley, Ky.
Bredehoft, J. C., from Kansas City, Mo., to Bucklin, Kan.
Binkley, J. T., from 452 E. 49th St., to Windemere Hotel, Chicago, Ill.
Caldwell, W. S., from Vienna, Austria, to 7 Rue Scribe, Paris, France. Care of Monroe & Co.
Chesmore, H. P., from St. Joseph, to Nodaway, Mo.
Campbell, W. L., from 504 Olive St. to 123 Brooklyn St., Kansas City, Mo.
Anderson, C. L., from 2400 Chestnut Ave. to 2316 Agnes St., Kansas City, Mo.
Dunn, B. S., from Whitestone, N. Y., to Ardsley on Hudson.
Devine, G. C., from Chetek to Mason, Wis.
Dye, J. S., from Little Rock, Ark., to Chattanooga, Tenn.
Grottheess, J. O., from Wauwatosa to Ixonia, Wis.
George, L. C., from Alexandria to Shreveport, La.
Hunter, R. B., from Winchester, Ky., to 904 South St., Springfield, Mo.
Hering, E. R., from Manawa to Cross Plains, Wis.
Hutchins, S. E., from Arcadia to Whitehall, Wis.
Halstead, A. E., from 844 Warren Ave. to 2937 Indiana Ave., Chicago, Ill
Harold, A. W., from Iowa City to Ackley, Iowa.
Hibbs, W. A., from 618 Kansas Ave., Topeka, to Delphos, Kan.
Hemingway, W. C., from Rome to Lambert, S. C.
Jernigan, V. J., from Union City to Obion, Tenn.
Johnson, I. E., from Lebanon to Lebanon Junction, Ky.
Kent, F., from New Orleans, La., to Gonzales, Tex.
Kirby, E. G., from Salem to Elgin, Ore.
Lehman, C. A., from 2009 Market St., to Gill & League Bldg., Room 13, Galveston, Texas.
La Rue, H. M., from 511 E. 8th St., to Savoy Hotel, Kansas City, Mo.
Lamerton, E. W., from Chicago, Ill., to Wyoming, Iowa.
Litzinger, G. H., from Kansas City, Mo., to Milford, Kans.
Miller, E. E., from Omaha to Surprise, Neb.
McCullough, S. S., from Itasca, Texas, to Ramsay, Miss.
Medringhaus, R. E., from St. Louis to Eagle, Mo.
Le Moyne, F., from Pittsburg, Pa., to Melvale, Md.
Major, C., from Salt Lake City, Utah, to Denison, Iowa.
Mitchell, J. M., from 42 Laflin St., Chicago, to Pontiac, Ill.
Morcom, H. W., from 618 W. Monroe St. to 165 Wood St., Chicago, Ill.
Marugg, A., from Delaware to Monticello, Iowa.
Maxey, E. E., from Caldwell, Idaho, to Johns Hopkins Medical College, Baltimore, Md.
Miller, J. H., from Pana, Ill., to 1901 Jefferson St., Baltimore, Md.
Pettyjohn, E. S., from Alma, Mich., to Stewart Bldg., Chicago.
Peehn, F., from Ives Grove, to Western Union Junction, Wis.
Platt, J. J., from Pembina, N. D., to Arcadia, St. Paul, Minn.
Riley, B. M., from 518 N. 19th St. to St. Joseph's Hospital, Omaha, Neb.
Reitzel, W. M., from Waterville to Bremen, Kan.
Snow, H. O., from Abbeville to Douglas, Ga.
Smith, E. A., from 1928 Archer Ave. to 1910 State St., Chicago.
Spearman, G. T., from Kelly, Ga., to Hamilton, Texas.
Thill, D. P., from 706 Smith St. to 1101 North Ave., Milwaukee, Wis.
Waller, E. E., from Allegheny to Markleton, Pa.